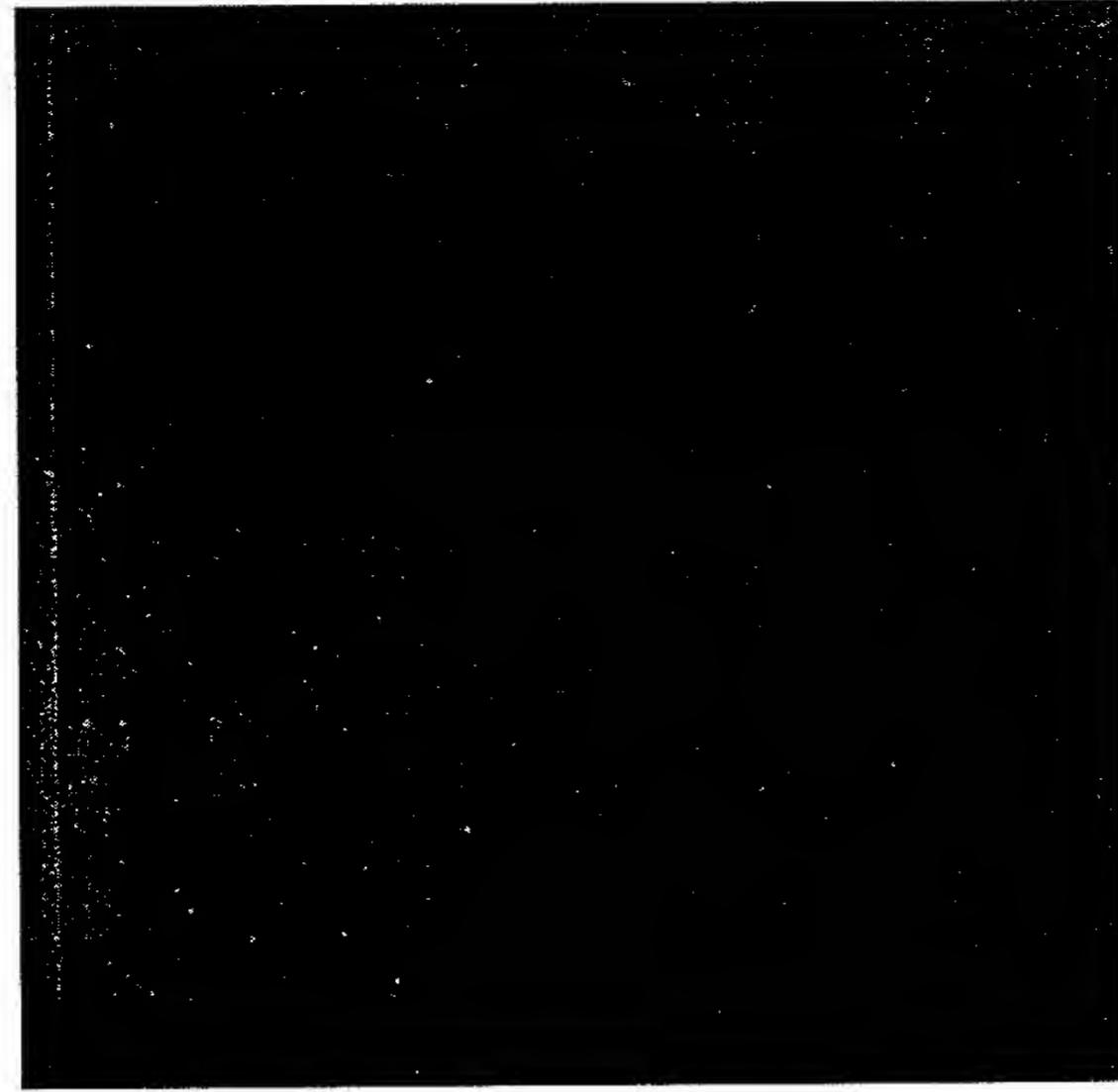


FITC-SA



FITC-gp96

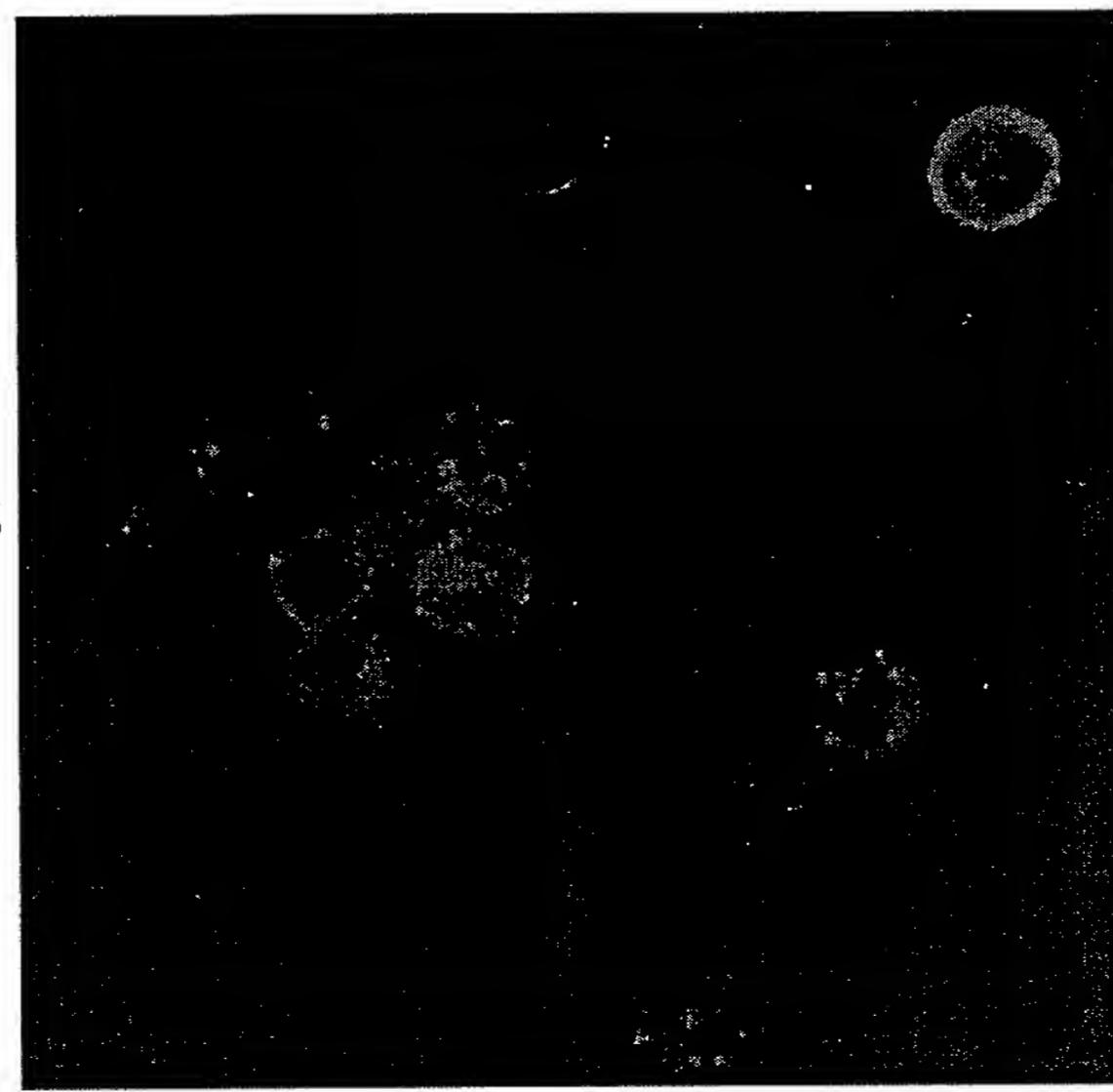


FIG. 1 A

2/65

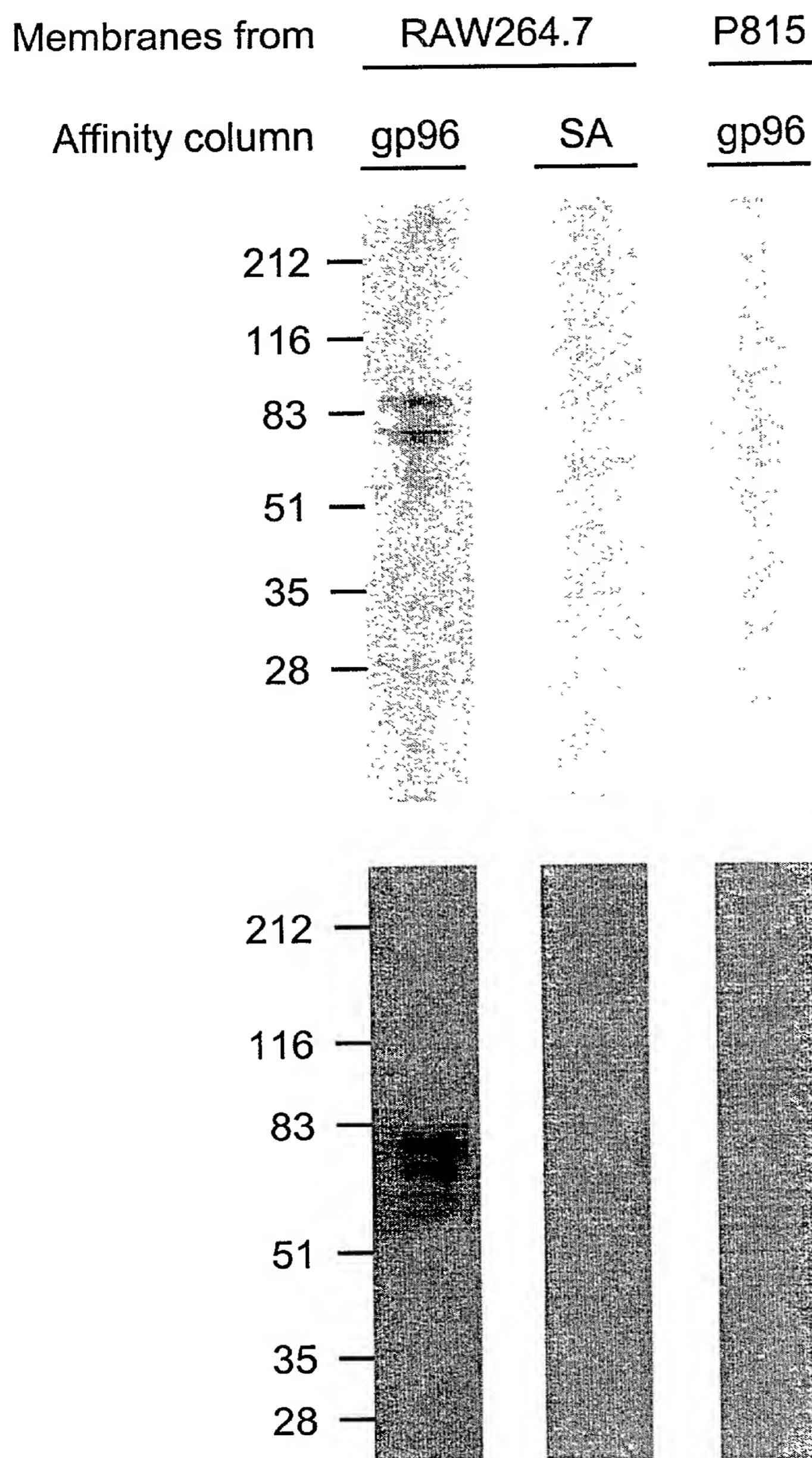


FIG. 1B

3/65

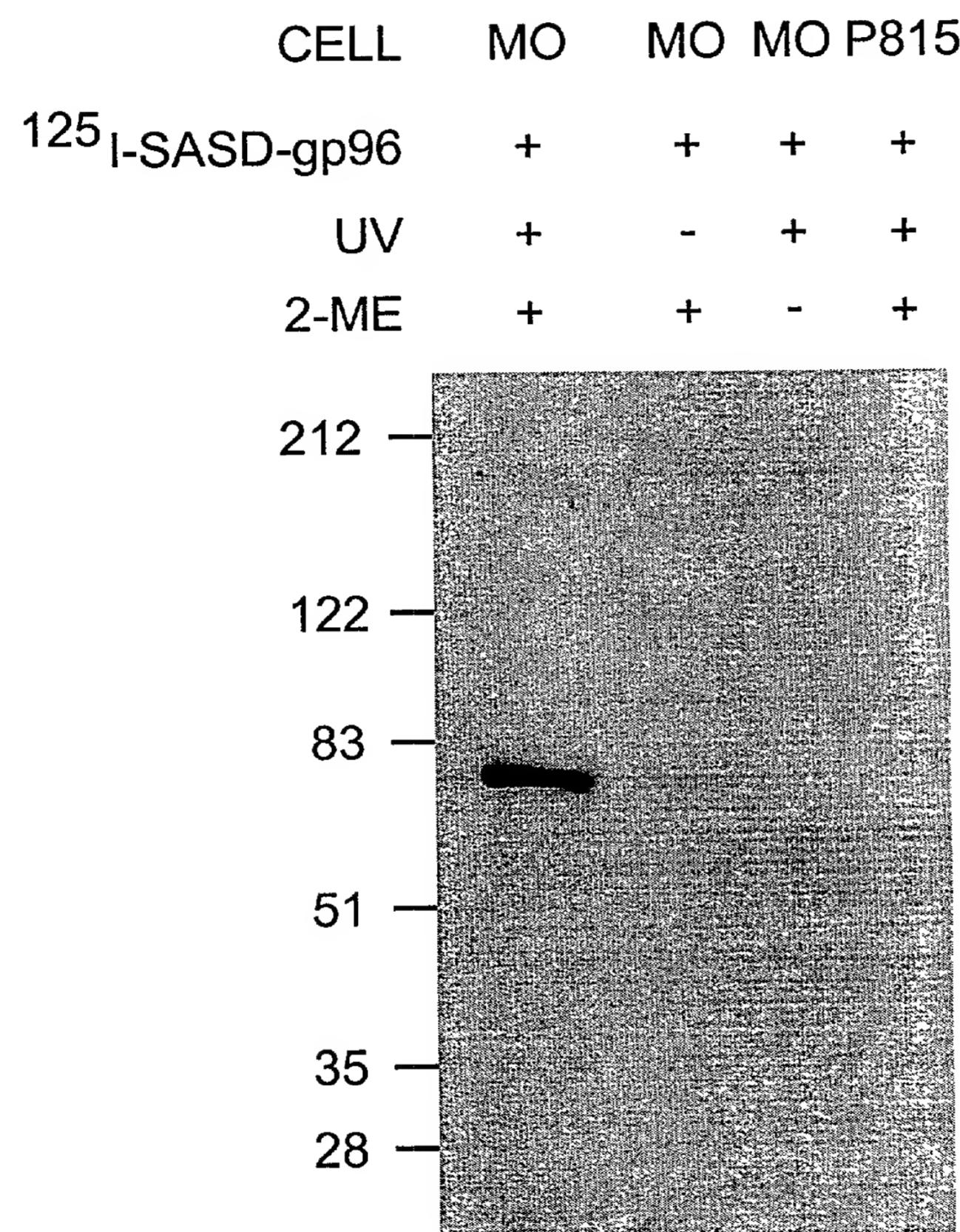


FIG. 1C

122 —  
83 —  
51 —  
35 —

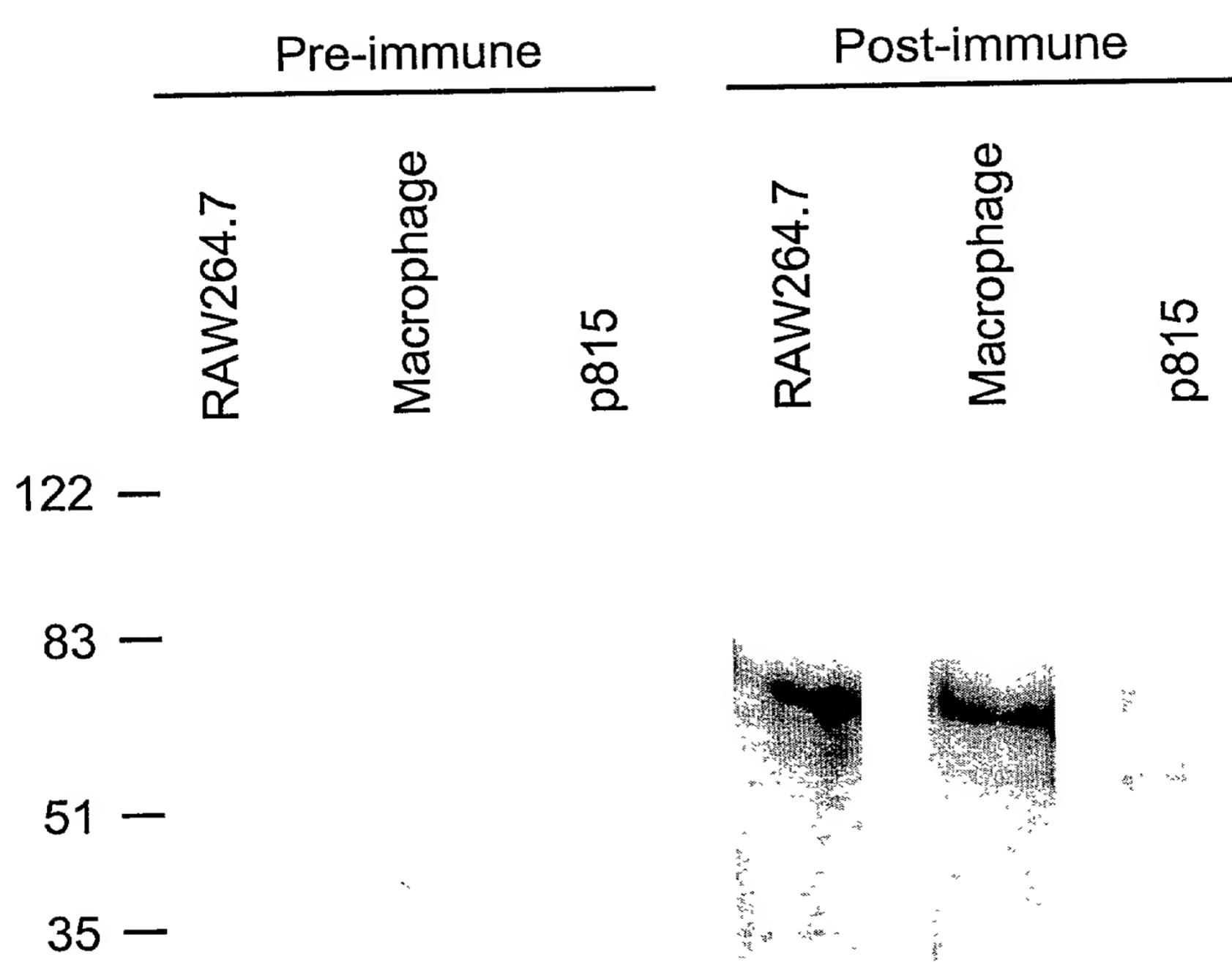


FIG. 2A

5/65

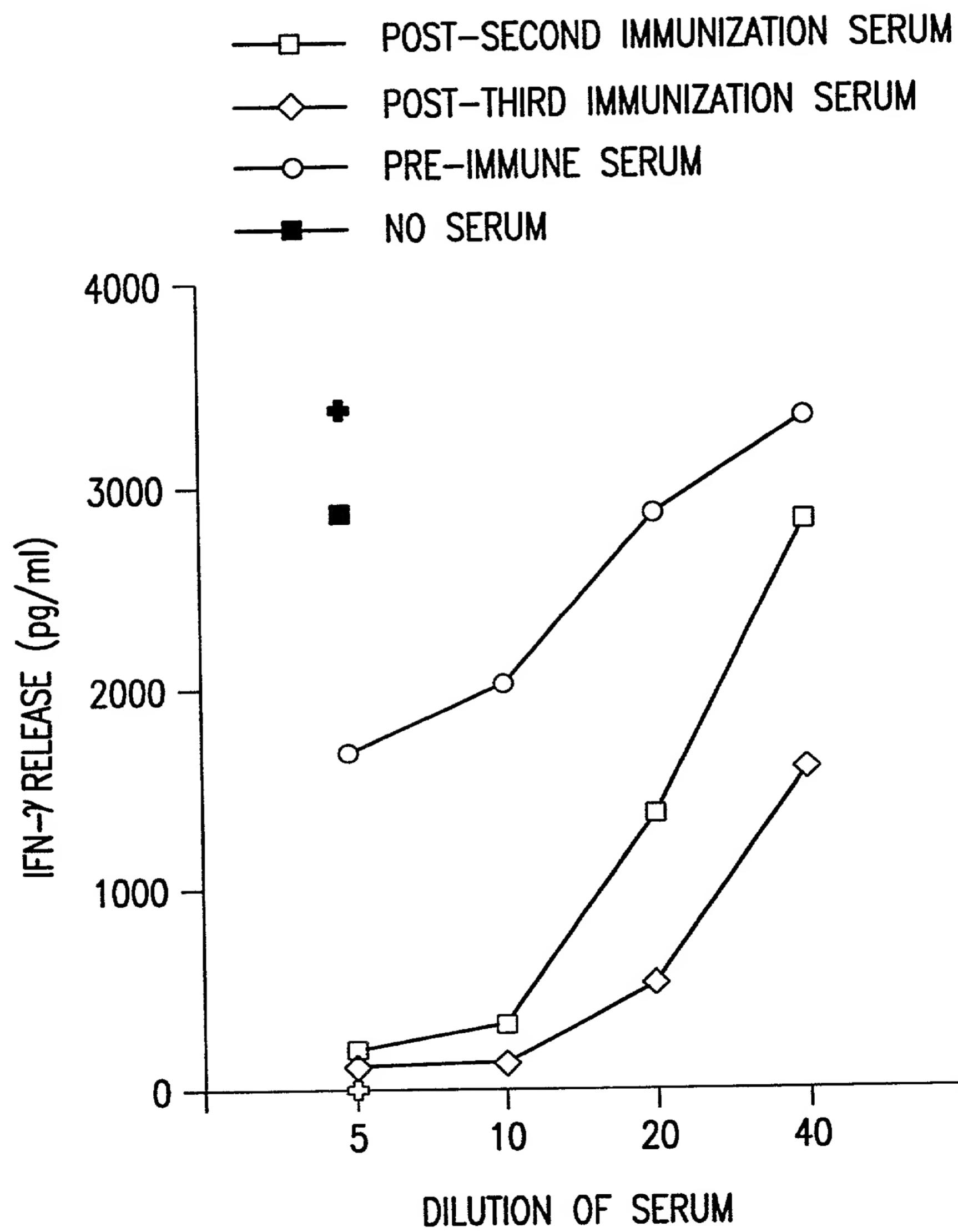


FIG.2B

<u>Seq</u>	<u>#</u>	<u>b</u>	<u>y</u>	<u>+1</u>
G	1	58.1	-	10
G	2	115.1	1095.2	9
A	3	186.2	1038.2	8
L	4	299.3	967.1	7
H	5	436.5	853.9	6
I	6	549.6	716.8	5
Y	7	712.8	603.6	4
H	8	850.0	440.5	3
Q	9	978.1	303.3	2
R	10	-	175.2	1

FIG.3A

7/65

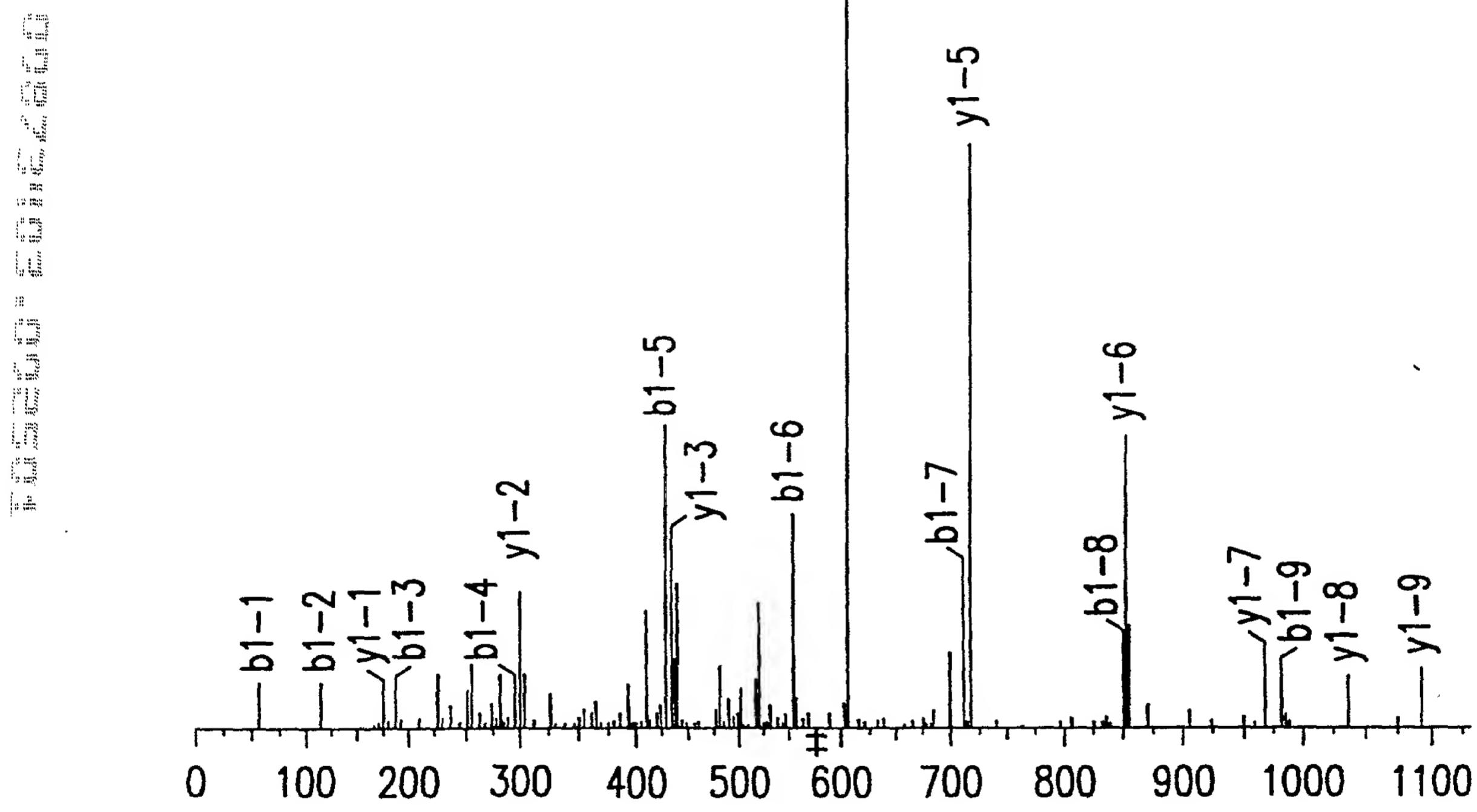


FIG.3B

POSITION	MH+	SEQUENCE	
509-518	955.0122	SGFSLGSDGK	(SEQ ID NO: 54)
328-337	973.1753	GIALDPAMGK	(SEQ ID NO: 55)
460-469	1152.3010	GGALHIYHQR	(SEQ ID NO: 56)
338-348	1315.5116	VFFTDYQIPK	(SEQ ID NO: 57)

FIG.3C

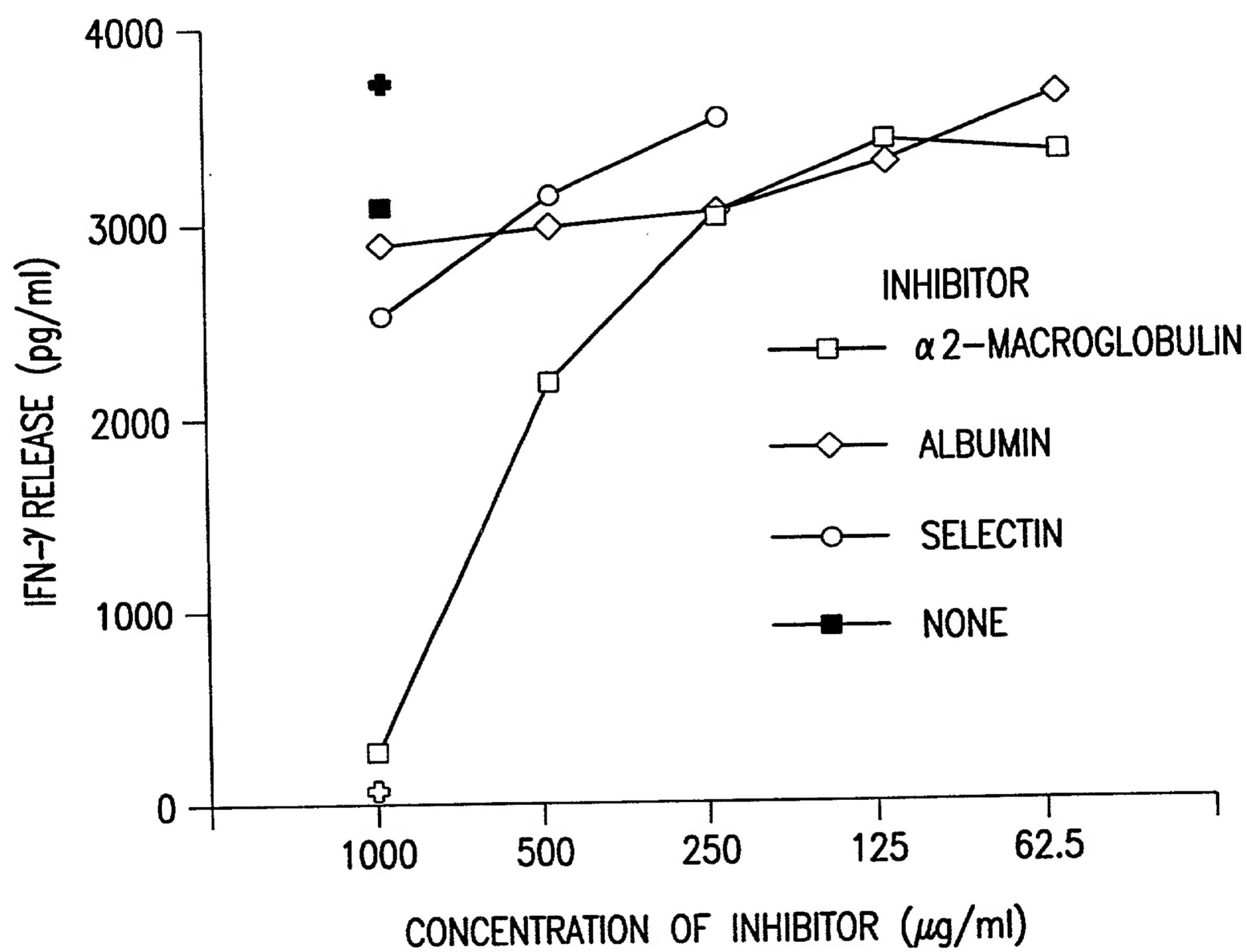


FIG.4

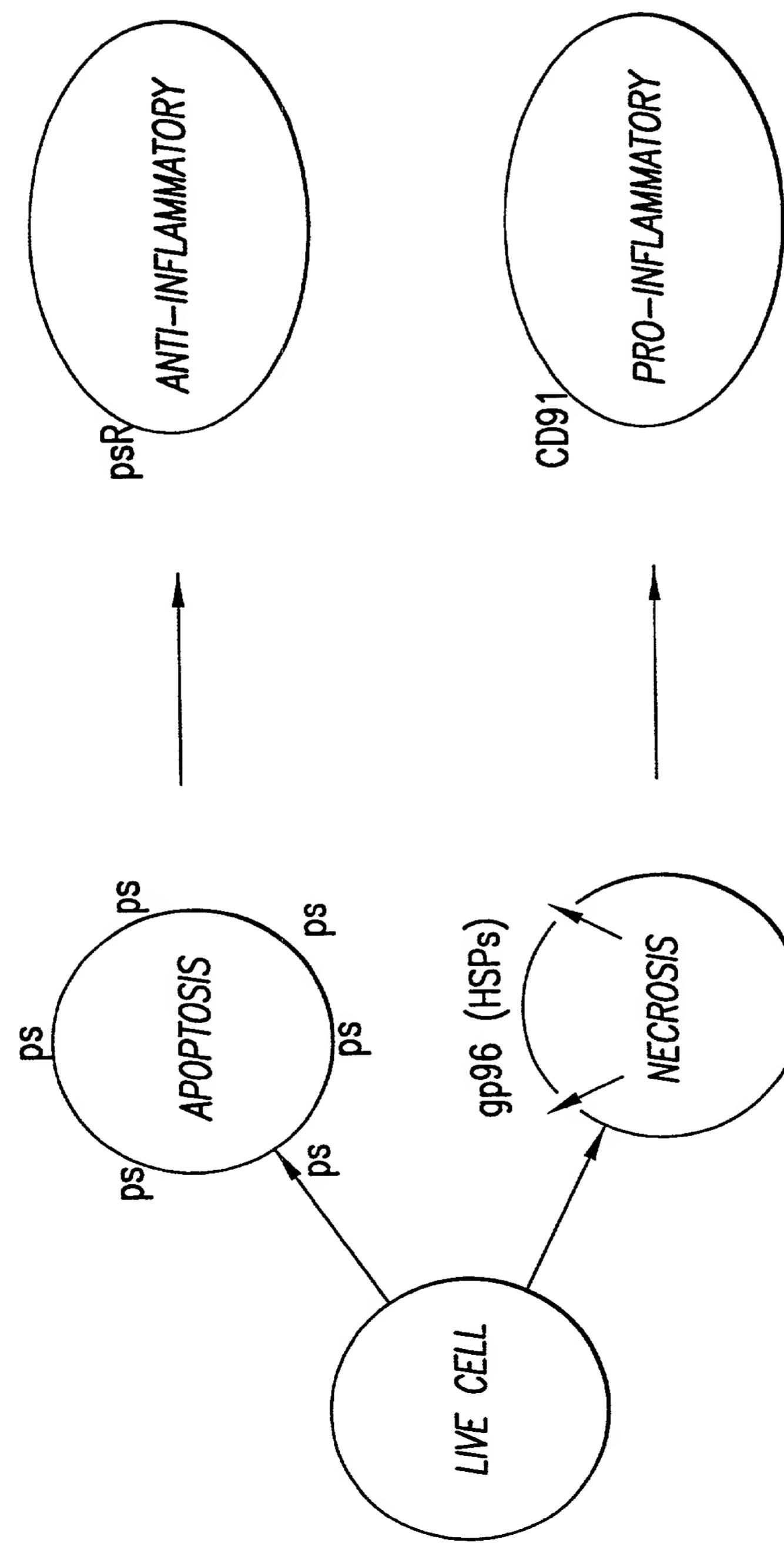


FIG. 5

## 11/65

CGCTGCTCCC CGCCAGTGCA CTGAGGGAGGC GGAAACGGGG GAGCCCCTAG TGCTCCATCA	60
GGCCCCTACC AAGGCACCCC CATCGGGTCC ACGCCCCCA CCCCCCACCC CGCCTCCTCC	120
CAATTGTGCA TTTTGCGAGC CGGAGTCGGC TCCGAGATGG GGCTGTGAGC TTCGCCCTGG	180
GAGGGGGAGA GGAGCGAGGA GTAAAGCAGG GGTGAAGGGT TCGAATTGG GGGCAGGGGG	240
CGCACCCCGCG TCAGCAGGCC CTTCCCAGGG GGCTCGGAAC TGTACCATT CACCTATGCC	300
CCTGGTTCGC TTTGCTTAAG GAAGGATAAG ATAGAAGAGT CGGGGAGAGG AAGATAAAGG	360
GGGACCCCCC AATTGGGGGG GGCGAGGACA AGAAGTAACA GGACCAGAGG GTGGGGGGCTG	420
CTGTTTGCAT CGGCCACAC C ATG CTG ACC CCG CCG TTG CTG CTG CTC GTG	471
Met Leu Thr Pro Pro Leu Leu Leu Leu Val	
1 5 10	
CCG CTG CTT TCA GCT CTG GTC TCC GGG GCC ACT ATG GAT GCC CCT AAA	519
Pro Leu Leu Ser Ala Leu Val Ser Gly Ala Thr Met Asp Ala Pro Lys	
15 20 25	
ACT TGC AGC CCT AAG CAG TTT GCC TGC AGA GAC CAA ATC ACC ACC TGT ATC	567
Thr Cys Ser Pro Lys Gln Phe Ala Cys Arg Asp Gln Ile Thr Cys Ile	
30 35 40	
TCA AAG GGC TGG CGG TGT GAC GGT GAA AGA GAT TGC CCC GAC GGC TCT	615
Ser Lys Gly Trp Arg Cys Asp Gly Glu Arg Asp Cys Pro Asp Gly Ser	
45 50 55	
GAT GAA GCC CCT GAG ATC TGT CCA CAG AGT AAA GCC CAG AGA TGC CCG	663
Asp Glu Ala Pro Glu Ile Cys Pro Gln Ser Lys Ala Gln Arg Cys Pro	
60 65 70	
CCA AAT GAG CAC AGT TGT CTG GGG ACT GAG CTA TGT GTC CCC ATG TCT	711
Pro Asn Glu His Ser Cys Leu Gly Thr Glu Leu Cys Val Pro Met Ser	
75 80 85 90	
CGT CTC TGC AAC GGG ATC CAG GAC TGC ATG GAT GGC TCA GAC GAG GGT	759
Arg Leu Cys Asn Gly Ile Gln Asp Cys Met Asp Gly Ser Asp Glu Gly	
95 100 105	
GCT CAC TGC CGA GAG CTC CGA GCC AAC TGT TCT CGA ATG GGT TGT CAA	807
Ala His Cys Arg Glu Leu Arg Ala Asn Cys Ser Arg Met Gly Cys Gln	
110 115 120	
CAC CAT TGT GTA CCT ACA CCC AGT GGG CCC ACG TGC TAC TGT AAC AGC	855
His His Cys Val Pro Thr Pro Ser Gly Pro Thr Cys Tyr Cys Asn Ser	
125 130 135	

## 12/65

AGC	TTC	CAG	CTC	GAG	GCA	GAT	GGC	AAG	ACG	TGC	AAA	GAT	TTT	GAC	GAG	903
Ser	Phe	Gln	Leu	Glu	Ala	Asp	Gly	Lys	Thr	Cys	Lys	Asp	Phe	Asp	Glu	
140				145						150						
TGT	TCC	GTG	TAT	GGC	ACC	TGC	AGC	CAG	CTT	TGC	ACC	AAC	ACA	GAT	GGC	951
Cys	Ser	Val	Tyr	Gly	Thr	Cys	Ser	Gln	Leu	Cys	Thr	Asn	Thr	Asp	Gly	
155				160				165			170					
TCC	TTC	ACA	TGT	GGC	TGT	GTT	GAA	GGC	TAC	CTG	CTG	CAA	CCG	GAC	AAC	999
Ser	Phe	Thr	Cys	Gly	Cys	Val	Glu	Gly	Tyr	Leu	Leu	Gln	Pro	Asp	Asn	
					175				180			185				
CGC	TCC	TGC	AAG	GCC	AAG	AAT	GAG	CCA	GTA	GAT	CGG	CCG	CCA	GTG	CTA	1047
Arg	Ser	Cys	Lys	Ala	Lys	Asn	Glu	Pro	Val	Asp	Arg	Pro	Pro	Val	Leu	
				190				195			200					
CTG	ATT	GCC	AAC	TCT	CAG	AAC	ATC	CTA	GCT	ACG	TAC	CTG	AGT	GGG	GCC	1095
Leu	Ile	Ala	Asn	Ser	Gln	Asn	Ile	Leu	Ala	Thr	Tyr	Leu	Ser	Gly	Ala	
				205			210			215						
CAA	GTG	TCT	ACC	ATC	ACA	CCC	ACC	AGC	ACC	CGA	CAA	ACC	ACG	GCC	ATG	1143
Gln	Val	Ser	Thr	Ile	Thr	Pro	Thr	Ser	Thr	Arg	Gln	Thr	Thr	Ala	Met	
				220			225			230						
GAC	TTC	AGT	TAT	GCC	AAT	GAG	ACC	GTA	TGC	TGG	GTG	CAC	GTT	GGG	GAC	1191
Asp	Phe	Ser	Tyr	Ala	Asn	Glu	Thr	Val	Cys	Trp	Val	His	Val	Gly	Asp	
				235			240			245			250			
AGT	GCT	GCC	CAG	ACA	CAG	CTC	AAG	TGT	GCC	CGG	ATG	CCT	GGC	CTG	AAG	1239
Ser	Ala	Ala	Gln	Thr	Gln	Leu	Lys	Cys	Ala	Arg	Met	Pro	Gly	Leu	Lys	
				255			260			265						
GGC	TTT	GTG	GAT	GAG	CAT	ACC	ATC	AAC	ATC	TCC	CTC	AGC	CTG	CAC	CAC	1287
Gly	Phe	Val	Asp	Glu	His	Thr	Ile	Asn	Ile	Ser	Leu	Ser	Leu	His	His	
				270			275			280						
GTG	GAG	CAG	ATG	GCA	ATC	GAC	TGG	CTG	ACG	GGA	AAC	TTC	TAC	TTT	GTC	1335
Val	Glu	Gln	Met	Ala	Ile	Asp	Trp	Leu	Thr	Gly	Asn	Phe	Tyr	Phe	Val	
				285			290			295						
GAC	GAC	ATT	GAC	GAC	AGG	ATC	TTT	GTC	TGT	AAC	CGA	AAC	GGG	GAC	ACC	1383
Asp	Asp	Ile	Asp	Asp	Arg	Ile	Phe	Val	Cys	Asn	Arg	Asn	Gly	Asp	Thr	
				300			305			310						

FIG.6A-2

## 13/65

TGT GTC ACT CTG CTG GAC CTG GAA CTC TAC AAC CCC AAA GGC ATC GCC	1431
Cys Val Thr Leu Leu Asp Leu Glu Leu Tyr Asn Pro Lys Gly Ile Ala	
315 320 325 330	
TTG GAC CCC GCC ATG GGG AAG GTG TTC TTC ACT GAC TAC GGG CAG ATC	1479
Leu Asp Pro Ala Met Gly Lys Val Phe Phe Thr Asp Tyr Gly Gln Ile	
335 340 345	
CCA AAG GTG GAG CGC TGT GAC ATG GAT GGA CAG AAC CGC ACC AAG CTG	1527
Pro Lys Val Glu Arg Cys Asp Met Asp Gly Gln Asn Arg Thr Lys Leu	
350 355 360	
GTG GAT AGC AAG ATC GTG TTT CCA CAC GGC ATC ACC CTG GAC CTG GTC	1575
Val Asp Ser Lys Ile Val Phe Pro His Gly Ile Thr Leu Asp Leu Val	
365 370 375	
AGC CGC CTC GTC TAC TGG GCG GAC GCC TAC CTA GAC TAC ATC GAG GTG	1623
Ser Arg Leu Val Tyr Trp Ala Asp Ala Tyr Leu Asp Tyr Ile Glu Val	
380 385 390	
GTA GAC TAC GAA GGG AAG GGT CGG CAG ACC ATC ATC CAA GGC ATC CTG	1671
Val Asp Tyr Glu Gly Lys Gly Arg Gln Thr Ile Ile Gln Gly Ile Leu	
395 400 405 410	
ATC GAG CAC CTG TAC GGC CTG ACC GTG TTT GAG AAC TAT CTC TAC GCC	1719
Ile Glu His Leu Tyr Gly Leu Thr Val Phe Glu Asn Tyr Leu Tyr Ala	
415 420 425	
ACC AAC TCG GAC AAT GCC AAC ACG CAG CAG AAG ACG AGC GTG ATC CGA	1767
Thr Asn Ser Asp Asn Ala Asn Thr Gln Gln Lys Thr Ser Val Ile Arg	
430 435 440	
GTG AAC CGG TTC AAC AGT ACT GAG TAC CAG GTC GTC ACC CGT GTG GAC	1815
Val Asn Arg Phe Asn Ser Thr Glu Tyr Gln Val Val Thr Arg Val Asp	
445 450 455	
AAG GGT GGT GCC CTG CAT ATC TAC CAC CAG CGA CGC CAG CCC CGA GTG	1863
Lys Gly Gly Ala Leu His Ile Tyr His Gln Arg Arg Gln Pro Arg Val	
460 465 470	
CGG AGT CAC GCC TGT GAG AAT GAC CAG TAC GGG AAG CCA GGT GGC TGC	1911
Arg Ser His Ala Cys Glu Asn Asp Gln Tyr Gly Lys Pro Gly Gly Cys	
475 480 485 490	

## 14/65

TCC GAC ATC TGC CTC CTG GCC AAC AGT CAC AAG GCA AGG ACC TGC AGG			1959
Ser Asp Ile Cys Leu Leu Ala Asn Ser His Lys Ala Arg Thr Cys Arg			
495	500	505	
TGC AGG TCT GGC TTC AGC CTG GGA AGT GAT GGG AAG TCT TGT AAG AAA			2007
Cys Arg Ser Gly Phe Ser Leu Gly Ser Asp Gly Lys Ser Cys Lys Lys			
510	515	520	
CCT GAA CAT GAG CTG TTC CTC GTG TAT GGC AAG GGC CGA CCA GGC ATC			2055
Pro Glu His Glu Leu Phe Leu Val Tyr Gly Lys Gly Arg Pro Gly Ile			
525	530	535	
ATT AGA GGC ATG GAC ATG GGG GCC AAG GTC CCA GAT GAG CAC ATG ATC			2103
Ile Arg Gly Met Asp Met Gly Ala Lys Val Pro Asp Glu His Met Ile			
540	545	550	
CCC ATC GAG AAC CTT ATG AAT CCA CGC GCT CTG GAC TTC CAC GCC GAG			2151
Pro Ile Glu Asn Leu Met Asn Pro Arg Ala Leu Asp Phe His Ala Glu			
555	560	565	570
ACC GGC TTC ATC TAC TTT GCT GAC ACC ACC AGC TAC CTC ATT GGC CGC			2199
Thr Gly Phe Ile Tyr Phe Ala Asp Thr Thr Ser Tyr Leu Ile Gly Arg			
575	580	585	
CAG AAA ATT GAT GGC ACG GAG AGA GAG ACT ATC CTG AAG GAT GGC ATC			2247
Gln Lys Ile Asp Gly Thr Glu Arg Glu Thr Ile Leu Lys Asp Gly Ile			
590	595	600	
CAC AAT GTG GAG GGC GTA GCC GTG GAC TGG ATG GGA GAC AAT CTT TAC			2295
His Asn Val Glu Gly Val Ala Val Asp Trp Met Gly Asp Asn Leu Tyr			
605	610	615	
TGG ACT GAT GAT GGC CCC AAG AAG ACC ATT AGT GTG GCC AGG CTG GAG			2343
Trp Thr Asp Asp Gly Pro Lys Lys Thr Ile Ser Val Ala Arg Leu Glu			
620	625	630	
AAA GCC GCT CAG ACC CGG AAG ACT CTA ATT GAG GGC AAG ATG ACA CAC			2391
Lys Ala Ala Gln Thr Arg Lys Thr Leu Ile Glu Gly Lys Met Thr His			
635	640	645	650
CCC AGG GCC ATT GTA GTG GAT CCA CTC AAT GGG TGG ATG TAC TGG ACA			2439
Pro Arg Ala Ile Val Val Asp Pro Leu Asn Gly Trp Met Tyr Trp Thr			
655	660	665	

FIG.6A-4

15/65

GAC	TGG	GAG	GAG	GAC	CCC	AAG	GAC	AGT	CGG	CGA	GGG	CGG	CTC	GAG	AGG	2487
Asp	Trp	Glu	Glu	Asp	Pro	Lys	Asp	Ser	Arg	Arg	Gly	Arg	Leu	Glu	Arg	
670							675						680			
GCT	TGG	ATG	GAC	GGC	TCA	CAC	CGA	GAT	ATC	TTT	GTC	ACC	TCC	AAG	ACA	2535
Ala	Trp	Met	Asp	Gly	Ser	His	Arg	Asp	Ile	Phe	Val	Thr	Ser	Lys	Thr	
685							690						695			
GTG	CTT	TGG	CCC	AAT	GGG	CTA	AGC	CTG	GAT	ATC	CCA	GCC	GGA	CGC	CTC	2583
Val	Leu	Trp	Pro	Asn	Gly	Leu	Ser	Leu	Asp	Ile	Pro	Ala	Gly	Arg	Leu	
700							705						710			
TAC	TGG	GTG	GAT	GCC	TTC	TAT	GAC	CGA	ATT	GAG	ACC	ATA	CTG	CTC	AAT	2631
Tyr	Trp	Val	Asp	Ala	Phe	Tyr	Asp	Arg	Ile	Glu	Thr	Ile	Leu	Leu	Asn	
715							720						725			730
GGC	ACA	GAC	CGG	AAG	ATT	GTA	TAT	GAG	GGT	CCT	GAA	CTG	AAT	CAT	GCC	2679
Gly	Thr	Asp	Arg	Lys	Ile	Val	Tyr	Glu	Gly	Pro	Glu	Leu	Asn	His	Ala	
735							740						745			
TTC	GGC	CTG	TGT	CAC	CAT	GGC	AAC	TAC	CTC	TTT	TGG	ACC	GAG	TAC	CGG	2727
Phe	Gly	Leu	Cys	His	His	Gly	Asn	Tyr	Leu	Phe	Trp	Thr	Glu	Tyr	Arg	
750							755						760			
AGC	GGC	AGC	GTC	TAC	CGC	TTG	GAA	CGG	GGC	GTG	GCA	GGC	GCA	CCG	CCC	2775
Ser	Gly	Ser	Val	Tyr	Arg	Leu	Glu	Arg	Gly	Val	Ala	Gly	Ala	Pro	Pro	
765							770						775			
ACT	GTG	ACC	CTT	CTG	CGC	AGC	GAG	AGA	CCG	CCT	ATC	TTT	GAG	ATC	CGA	2823
Thr	Val	Thr	Leu	Leu	Arg	Ser	Glu	Arg	Pro	Pro	Ile	Phe	Glu	Ile	Arg	
780							785						790			
ATG	TAC	GAC	GCG	CAC	GAG	CAG	CAA	GTG	GGT	ACC	AAC	AAA	TGC	CGG	GTA	2871
Met	Tyr	Asp	Ala	His	Glu	Gln	Gln	Val	Gly	Thr	Asn	Lys	Cys	Arg	Val	
795							800						805			810
AAT	AAC	GGA	GGC	TGC	AGC	AGC	CTG	TGC	CTC	GCC	ACC	CCC	GGG	AGC	CGC	2919
Asn	Asn	Gly	Gly	Cys	Ser	Ser	Leu	Cys	Leu	Ala	Thr	Pro	Gly	Ser	Arg	
815							820						825			
CAG	TGT	GCC	TGT	GCC	GAG	GAC	CAG	GTG	TTG	GAC	ACA	GAT	GGT	GTC	ACC	2967
Gln	Cys	Ala	Cys	Ala	Glu	Asp	Gln	Val	Leu	Asp	Thr	Asp	Gly	Val	Thr	
830							835						840			

FIG.6A-5

## 16/65

TGC TTG GCG AAC CCA TCC TAC GTG CCC CCA CCC CAG TGC CAG CCG GGC Cys Leu Ala Asn Pro Ser Tyr Val Pro Pro Pro Gln Cys Gln Pro Gly 845 850 855	3015
CAG TTT GCC TGT GCC AAC AAC CGC TGC ATC CAG GAG CGC TGG AAG TGT Gln Phe Ala Cys Ala Asn Asn Arg Cys Ile Gln Glu Arg Trp Lys Cys 860 865 870	3063
GAC GGA GAC AAC GAC TGT CTG GAC AAC AGC GAT GAG GCC CCA GCA CTG Asp Gly Asp Asn Asp Cys Leu Asp Asn Ser Asp Glu Ala Pro Ala Leu 875 880 885 890	3111
TGC CAT CAA CAC ACC TGT CCC TCG GAC CGA TTC AAG TGT GAG AAC AAC Cys His Gln His Thr Cys Pro Ser Asp Arg Phe Lys Cys Glu Asn Asn 895 900 905	3159
CGG TGT ATC CCC AAC CGC TGG CTC TGT GAT GGG GAT AAT GAT TGT GGC Arg Cys Ile Pro Asn Arg Trp Leu Cys Asp Gly Asp Asn Asp Cys Gly 910 915 920	3207
AAC AGC GAG GAC GAA TCC AAT GCC ACG TGC TCA GCC CGC ACC TGT CCA Asn Ser Glu Asp Glu Ser Asn Ala Thr Cys Ser Ala Arg Thr Cys Pro 925 930 935	3255
CCC AAC CAG TTC TCC TGT GCC AGT GGC CGA TGC ATT CCT ATC TCA TGG Pro Asn Gln Phe Ser Cys Ala Ser Gly Arg Cys Ile Pro Ile Ser Trp 940 945 950	3303
ACC TGT GAT CTG GAT GAT GAC TGT GGG GAC CGG TCC GAT GAG TCA GCC Thr Cys Asp Leu Asp Asp Cys Gly Asp Arg Ser Asp Glu Ser Ala 955 960 965 970	3351
TCA TGC GCC TAC CCC ACC TGC TTC CCC CTG ACT CAA TTT ACC TGC AAC Ser Cys Ala Tyr Pro Thr Cys Phe Pro Leu Thr Gln Phe Thr Cys Asn 975 980 985	3399
AAT GGC AGA TGT ATT AAC ATC AAC TGG CGG TGT GAC AAC GAC AAT GAC Asn Gly Arg Cys Ile Asn Ile Asn Trp Arg Cys Asp Asn Asp Asn Asp 990 995 1000	3447
TGT GGG GAC AAC AGC GAC GAA GCC GGC TGC AGT CAC TCC TGC TCC AGT Cys Gly Asp Asn Ser Asp Glu Ala Gly Cys Ser His Ser Cys Ser Ser 1005 1010 1015	3495

FIG.6A-6

## 17/65

ACC CAG TTC AAG TGC AAC AGT GGC AGA TGC ATC CCC GAG CAC TGG ACG	3543
Thr Gln Phe Lys Cys Asn Ser Gly Arg Cys Ile Pro Glu His Trp Thr	
1020 1025 1030	
TGT GAT GGG GAC AAT GAT TGT GGG GAC TAC AGC GAC GAG ACA CAC GCC	3591
Cys Asp Gly Asp Asn Asp Cys Gly Asp Tyr Ser Asp Glu Thr His Ala	
1035 1040 1045 1050	
AAC TGT ACC AAC CAG GCT ACA AGA CCT CCT GGT GGC TGC CAC TCG GAT	3639
Asn Cys Thr Asn Gln Ala Thr Arg Pro Pro Gly Gly Cys His Ser Asp	
1055 1060 1065	
GAG TTC CAG TGC CCG CTA GAT GGC CTG TGC ATC CCC CTG AGG TGG CGC	3687
Glut Phe Gln Cys Pro Leu Asp Gly Leu Cys Ile Pro Leu Arg Trp Arg	
1070 1075 1080	
TGC GAC GGG GAC ACC GAC TGC ATG GAT TCC AGC GAT GAG AAG AGC TGT	3735
Cys Asp Gly Asp Thr Asp Cys Met Asp Ser Ser Asp Glu Lys Ser Cys	
1085 1090 1095	
GAG GGC GTG ACC CAT GTT TGT GAC CCG AAT GTC AAG TTT GGC TGC AAG	3783
Glut Gly Val Thr His Val Cys Asp Pro Asn Val Lys Phe Gly Cys Lys	
1100 1105 1110	
GAC TCC GCC CGG TGC ATC AGC AAG GCG TGG GTG TGT GAT GGC GAC AGC	3831
Asp Ser Ala Arg Cys Ile Ser Lys Ala Trp Val Cys Asp Gly Asp Ser	
1115 1120 1125 1130	
GAC TGT GAA GAT AAC TCC GAC GAG GAG AAC TGT GAG GCC CTG GCC TGC	3879
Asp Cys Glu Asp Asn Ser Asp Glu Glu Asn Cys Glu Ala Leu Ala Cys	
1135 1140 1145	
AGG CCA CCC TCC CAT CCC TGC GCC AAC AAC ACC TCT GTC TGC CTG CCT	3927
Arg Pro Pro Ser His Pro Cys Ala Asn Asn Thr Ser Val Cys Leu Pro	
1150 1155 1160	
CCT GAC AAG CTG TGC GAC GGC AAG GAT GAC TGT GGA GAC GGC TCG GAT	3975
Pro Asp Lys Leu Cys Asp Gly Lys Asp Asp Cys Gly Asp Gly Ser Asp	
1165 1170 1175	
GAG GGC GAG CTC TGT GAC CAG TGT TCT CTG AAT AAT GGT GGC TGT AGT	4023
Glut Gly Glu Leu Cys Asp Gln Cys Ser Leu Asn Asn Gly Gly Cys Ser	
1180 1185 1190	

## 18/65

CAC AAC TGC TCA GTG GCC CCT GGT GAA GGC ATC GTG TGC TCT TGC CCT	4071
His Asn Cys Ser Val Ala Pro Gly Glu Gly Ile Val Cys Ser Cys Pro	
1195 1200 1205 1210	
CTG GGC ATG GAG CTG GGC TCT GAC AAC CAC ACC TGC CAG ATC CAG AGC	4119
Leu Gly Met Glu Leu Gly Ser Asp Asn His Thr Cys Gln Ile Gln Ser	
1215 1220 1225	
TAC TGT GCC AAG CAC CTC AAA TGC AGC CAG AAG TGT GAC CAG AAC AAG	4167
Tyr Cys Ala Lys His Leu Lys Cys Ser Gln Lys Cys Asp Gln Asn Lys	
1230 1235 1240	
TTC AGT GTG AAG TGC TCC TGC TAC GAG GGC TGG GTC TTG GAG CCT GAC	4215
Phe Ser Val Lys Cys Ser Cys Tyr Glu Gly Trp Val Leu Glu Pro Asp	
1245 1250 1255	
GGG GAA ACG TGC CGC AGT CTG GAT CCC TTC AAA CTG TTC ATC ATC TTC	4263
Gly Glu Thr Cys Arg Ser Leu Asp Pro Phe Lys Leu Phe Ile Ile Phe	
1260 1265 1270	
TCC AAC CGC CAC GAG ATC AGG CGC ATT GAC CTT CAC AAG GGG GAC TAC	4311
Ser Asn Arg His Glu Ile Arg Arg Ile Asp Leu His Lys Gly Asp Tyr	
1275 1280 1285 1290	
AGC GTC CTA GTG CCT GGC CTG CGC AAC ACT ATT GCC CTG GAC TTC CAC	4359
Ser Val Leu Val Pro Gly Leu Arg Asn Thr Ile Ala Leu Asp Phe His	
1295 1300 1305	
CTC AGC CAG AGT GCC CTC TAC TGG ACC GAC GCG GTA GAG GAC AAG ATC	4407
Leu Ser Gln Ser Ala Leu Tyr Trp Thr Asp Ala Val Glu Asp Lys Ile	
1310 1315 1320	
TAC CGT GGG AAA CTC CTG GAC AAC GGA GCC CTG ACC AGC TTT GAG GTG	4455
Tyr Arg Gly Lys Leu Leu Asp Asn Gly Ala Leu Thr Ser Phe Glu Val	
1325 1330 1335	
GTG ATT CAG TAT GGC TTG GCC ACA CCA GAG GGC CTG GCT GTA GAT TGG	4503
Val Ile Gln Tyr Gly Leu Ala Thr Pro Glu Gly Leu Ala Val Asp Trp	
1340 1345 1350	
ATT GCA GGC AAC ATC TAC TGG GTG GAG AGC AAC CTG GAC CAG ATC GAA	4551
Ile Ala Gly Asn Ile Tyr Trp Val Glu Ser Asn Leu Asp Gln Ile Glu	
1355 1360 1365 1370	

FIG.6A-8

## 19/65

GTG	GCC	AAG	CTG	GAC	GGA	ACC	CTC	CGA	ACC	ACT	CTG	CTG	GCG	GGT	GAC	4599
Val	Ala	Lys	Leu	Asp	Gly	Thr	Leu	Arg	Thr	Thr	Leu	Leu	Ala	Gly	Asp	
			1375				1380				1385					
ATT	GAG	CAC	CCG	AGG	GCC	ATC	GCT	CTG	GAC	CCT	CGG	GAT	GGG	ATT	CTG	4647
Ile	Glu	His	Pro	Arg	Ala	Ile	Ala	Leu	Asp	Pro	Arg	Asp	Gly	Ile	Leu	
	1390					1395				1400						
TTT	TGG	ACA	GAC	TGG	GAT	GCC	AGC	CTG	CCA	CGA	ATC	GAG	GCT	GCA	TCC	4695
Phe	Trp	Thr	Asp	Trp	Asp	Ala	Ser	Leu	Pro	Arg	Ile	Glu	Ala	Ala	Ser	
	1405			1410				1415								
ATG	AGT	GGA	GCT	GGC	CGC	CGA	ACC	ATC	CAC	CGG	GAG	ACA	GGC	TCT	GGG	4743
Met	Ser	Gly	Ala	Gly	Arg	Arg	Thr	Ile	His	Arg	Glu	Thr	Gly	Ser	Gly	
	1420			1425				1430								
GGC	TGC	GCC	AAT	GGG	CTC	ACC	GTG	GAT	TAC	CTG	GAG	AAG	CGC	ATC	CTC	4791
Gly	Cys	Ala	Asn	Gly	Leu	Thr	Val	Asp	Tyr	Leu	Glu	Lys	Arg	Ile	Leu	
	1435			1440			1445			1450						
TGG	ATT	GAT	GCT	AGG	TCA	GAT	GCC	ATC	TAT	TCA	GCC	CGG	TAT	GAC	GGC	4839
Trp	Ile	Asp	Ala	Arg	Ser	Asp	Ala	Ile	Tyr	Ser	Ala	Arg	Tyr	Asp	Gly	
	1455				1460				1465							
TCC	GGC	CAC	ATG	GAG	GTG	CTT	CGG	GGA	CAC	GAG	TTC	CTG	TCA	CAC	CCA	4887
Ser	Gly	His	Met	Glu	Val	Leu	Arg	Gly	His	Glu	Phe	Leu	Ser	His	Pro	
	1470				1475				1480							
TTT	GCC	GTG	ACA	CTG	TAC	GGT	GGG	GAG	GTG	TAC	TGG	ACC	GAC	TGG	CGA	4935
Phe	Ala	Val	Thr	Leu	Tyr	Gly	Gly	Glu	Val	Tyr	Trp	Thr	Asp	Trp	Arg	
	1485				1490				1495							
ACA	AAT	ACA	CTG	GCT	AAG	GCC	AAC	AAG	TGG	ACT	GGC	CAC	AAC	GTC	ACC	4983
Thr	Asn	Thr	Leu	Ala	Lys	Ala	Asn	Lys	Trp	Thr	Gly	His	Asn	Val	Thr	
	1500				1505				1510							
GTG	GTA	CAG	AGG	ACC	AAC	ACC	CAG	CCC	TTC	GAC	CTG	CAG	GTG	TAT	CAC	5031
Val	Val	Gln	Arg	Thr	Asn	Thr	Gln	Pro	Phe	Asp	Leu	Gln	Val	Tyr	His	
	1515			1520			1525			1530						
CCT	TCC	CGG	CAG	CCC	ATG	GCT	CCA	AAC	CCA	TGT	GAG	GCC	AAT	GGC	GGC	5079
Pro	Ser	Arg	Gln	Pro	Met	Ala	Pro	Asn	Pro	Cys	Glu	Ala	Asn	Gly	Gly	
	1535				1540				1545							

FIG.6A-9

## 20/65

CGG GGC CCC TGT TCC CAT CTG TGC CTC ATC AAC TAC AAC CGG ACC GTC	5127
Arg Gly Pro Cys Ser His Leu Cys Leu Ile Asn Tyr Asn Arg Thr Val	
1550 1555 1560	
TCC TGG GCC TGT CCC CAC CTC ATG AAG CTG CAC AAG GAC AAC ACC ACC	5175
Ser Trp Ala Cys Pro His Leu Met Lys Leu His Lys Asp Asn Thr Thr	
1565 1570 1575	
TGC TAT GAG TTT AAG AAG TTC CTG CTG TAC GCA CGT CAG ATG GAG ATC	5223
Cys Tyr Glu Phe Lys Lys Phe Leu Leu Tyr Ala Arg Gln Met Glu Ile	
1580 1585 1590	
CGG GGC GTG GAC CTG GAT GCC CCG TAC TAC AAT TAT ATC ATC TCC TTC	5271
Arg Gly Val Asp Leu Asp Ala Pro Tyr Tyr Asn Tyr Ile Ile Ser Phe	
1595 1600 1605 1610	
ACG GTG CCT GAT ATC GAC AAT GTC ACG GTG CTG GAC TAT GAT GCC CGA	5319
Thr Val Pro Asp Ile Asp Asn Val Thr Val Leu Asp Tyr Asp Ala Arg	
1615 1620 1625	
GAG CAG CGA GTT TAC TGG TCT GAT GTG CGG ACT CAA GCC ATC AAA AGG	5367
Glu Gln Arg Val Tyr Trp Ser Asp Val Arg Thr Gln Ala Ile Lys Arg	
1630 1635 1640	
GCA TTT ATC AAC GGC ACT GGC GTG GAG ACC GTT GTC TCT GCA GAC TTG	5415
Ala Phe Ile Asn Gly Thr Gly Val Glu Thr Val Val Ser Ala Asp Leu	
1645 1650 1655	
CCC AAC GCC CAC GGG CTG GCT GTG GAC TGG GTC TCC CGA AAT CTG TTT	5463
Pro Asn Ala His Gly Leu Ala Val Asp Trp Val Ser Arg Asn Leu Phe	
1660 1665 1670	
TGG ACA AGT TAC GAC ACC AAC AAG AAG CAG ATT AAC GTG GCC CGG CTG	5511
Trp Thr Ser Tyr Asp Thr Asn Lys Lys Gln Ile Asn Val Ala Arg Leu	
1675 1680 1685 1690	
GAC GGC TCC TTC AAG AAT GCG GTG GTG CAG GGC CTG GAG CAG CCC CAC	5559
Asp Gly Ser Phe Lys Asn Ala Val Val Gln Gly Leu Glu Gln Pro His	
1695 1700 1705	
GGC CTG GTC GTC CAC CCG CTT CGT GGC AAG CTC TAC TGG ACT GAT GGG	5607
Gly Leu Val Val His Pro Leu Arg Gly Lys Leu Tyr Trp Thr Asp Gly	
1710 1715 1720	

## 21/65

GAC AAC ATC AGC ATG GCC AAC ATG GAT GGG AGC AAC CAC ACT CTG CTC	5655
Asp Asn Ile Ser Met Ala Asn Met Asp Gly Ser Asn His Thr Leu Leu	
1725 1730 1735	
TTC AGT GGC CAG AAG GGC CCT GTG GGG TTG GCC ATT GAC TTC CCT GAG	5703
Phe Ser Gly Gln Lys Gly Pro Val Gly Leu Ala Ile Asp Phe Pro Glu	
1740 1745 1750	
AGC AAA CTC TAC TGG ATC AGC TCT GGG AAC CAC ACA ATC AAC CGT TGC	5751
Ser Lys Leu Tyr Trp Ile Ser Ser Gly Asn His Thr Ile Asn Arg Cys	
1755 1760 1765 1770	
AAT CTG GAT GGG AGC GAG CTG GAG GTC ATC GAC ACC ATG CGG AGC CAG	5799
Asn Leu Asp Gly Ser Glu Leu Glu Val Ile Asp Thr Met Arg Ser Gln	
1775 1780 1785	
CTG GGC AAG GCC ACT GCC CTG GCC ATC ATG GGG GAC AAG CTG TGG TGG	5847
Leu Gly Lys Ala Thr Ala Leu Ala Ile Met Gly Asp Lys Leu Trp Trp	
1790 1795 1800	
GCA GAT CAG GTG TCA GAG AAG ATG GGC ACG TGC AAC AAA GCC GAT GGC	5895
Ala Asp Gln Val Ser Glu Lys Met Gly Thr Cys Asn Lys Ala Asp Gly	
1805 1810 1815	
TCT GGG TCC GTG GTG CTG CGG AAC AGT ACC ACG TTG GTT ATG CAC ATG	5943
Ser Gly Ser Val Val Leu Arg Asn Ser Thr Thr Leu Val Met His Met	
1820 1825 1830	
AAG GTG TAT GAC GAG AGC ATC CAG CTA GAG CAT GAG GGC ACC AAC CCC	5991
Lys Val Tyr Asp Glu Ser Ile Gln Leu Glu His Glu Gly Thr Asn Pro	
1835 1840 1845 1850	
TGC AGT GTC AAC AAC GGA GAC TGT TCC CAG CTC TGC CTG CCA ACA TCA	6039
Cys Ser Val Asn Asn Gly Asp Cys Ser Gln Leu Cys Leu Pro Thr Ser	
1855 1860 1865	
GAG ACG ACT CGC TCC TGT ATG TGT ACA GCC GGT TAC AGC CTC CGG AGC	6087
Glu Thr Thr Arg Ser Cys Met Cys Thr Ala Gly Tyr Ser Leu Arg Ser	
1870 1875 1880	
GGA CAG CAG GCC TGT GAG GGT GTG GGC TCT TTT CTC CTG TAC TCT GTA	6135
Gly Gln Gln Ala Cys Glu Gly Val Gly Ser Phe Leu Leu Tyr Ser Val	
1885 1890 1895	

## 22/65

CAT	GAG	GGA	ATT	CGG	GGG	ATT	CCA	CTA	GAT	CCC	AAT	GAC	AAG	TCG	GAT	6183
His	Glu	Gly	Ile	Arg	Gly	Ile	Pro	Leu	Asp	Pro	Asn	Asp	Lys	Ser	Asp	
1900							1905							1910		
GCC	CTG	GTC	CCA	GTG	TCC	GGA	ACT	TCA	CTG	GCT	GTC	GGA	ATC	GAC	TTC	6231
Ala	Leu	Val	Pro	Val	Ser	Gly	Thr	Ser	Leu	Ala	Val	Gly	Ile	Asp	Phe	
1915							1920							1925		1930
CAT	GCC	GAA	AAT	GAC	ACT	ATT	TAT	TGG	GTG	GAT	ATG	GGC	CTA	AGC	ACC	6279
His	Ala	Glu	Asn	Asp	Thr	Ile	Tyr	Trp	Val	Asp	Met	Gly	Leu	Ser	Thr	
							1935							1940		1945
ATC	AGC	AGG	GCC	AAG	CGT	GAC	CAG	ACA	TGG	CGA	GAG	GAT	GTG	GTG	ACC	6327
Ile	Ser	Arg	Ala	Lys	Arg	Asp	Gln	Thr	Trp	Arg	Glu	Asp	Val	Val	Thr	
							1950							1955		1960
AAC	GGT	ATT	GGC	CGT	GTG	GAG	GGC	ATC	GCC	GTG	GAC	TGG	ATC	GCA	GCG	6375
Asn	Gly	Ile	Gly	Arg	Val	Glu	Gly	Ile	Ala	Val	Asp	Trp	Ile	Ala	Gly	
							1965							1970		1975
AAC	ATA	TAC	TGG	ACG	GAC	CAG	GGC	TTC	GAT	GTC	ATC	GAG	GTT	GCC	CGG	6423
Asn	Ile	Tyr	Trp	Thr	Asp	Gln	Gly	Phe	Asp	Val	Ile	Glu	Val	Ala	Arg	
							1980							1985		1990
CTC	AAT	GGC	TCT	TTT	CGT	TAT	GTG	GTC	ATT	TCC	CAG	GGT	CTG	GAC	AAG	6471
Leu	Asn	Gly	Ser	Phe	Arg	Tyr	Val	Val	Ile	Ser	Gln	Gly	Leu	Asp	Lys	
							1995							2000		2005
CCT	CGG	GCC	ATC	ACT	GTC	CAC	CCA	GAG	AAG	GGG	TAC	TTG	TTC	TGG	ACC	6519
Pro	Arg	Ala	Ile	Thr	Val	His	Pro	Glu	Lys	Gly	Tyr	Leu	Phe	Trp	Thr	
							2015							2020		2025
GAG	TGG	GGT	CAT	TAC	CCA	CGT	ATT	GAG	CGG	TCT	CGC	CTT	GAT	GGC	ACA	6567
Glu	Trp	Gly	His	Tyr	Pro	Arg	Ile	Glu	Arg	Ser	Arg	Leu	Asp	Gly	Thr	
							2030							2035		2040
GAG	AGA	GTG	GTG	TTG	GTT	AAT	GTC	AGC	ATC	AGC	TGG	CCC	AAT	GGC	ATC	6615
Glu	Arg	Val	Val	Leu	Val	Asn	Val	Ser	Ile	Ser	Trp	Pro	Asn	Gly	Ile	
							2045							2050		2055
TCA	GTA	GAC	TAT	CAG	GGC	GGC	AAG	CTC	TAC	TGG	TGT	GAT	GCT	CGG	ATG	6663
Ser	Val	Asp	Tyr	Gln	Gly	Gly	Lys	Leu	Tyr	Trp	Cys	Asp	Ala	Arg	Met	
							2060							2065		2070

FIG.6A-12

## 23/65

GAC	AAG	ATC	GAG	CGC	ATC	GAC	CTG	GAA	ACG	GGC	GAG	AAC	CGG	GAG	GTG	6711
Asp	Lys	Ile	Glu	Arg	Ile	Asp	Leu	Glu	Thr	Gly	Glu	Asn	Arg	Glu	Val	
2075			2080				2085								2090	
GTC	CTG	TCC	AGC	AAT	AAC	ATG	GAT	ATG	TTC	TCC	GTG	TCC	GTG	TTT	GAG	6759
Val	Leu	Ser	Ser	Asn	Asn	Met	Asp	Met	Phe	Ser	Val	Ser	Val	Phe	Glu	
			2095					2100							2105	
GAC	TTC	ATC	TAC	TGG	AGT	GAC	AGA	ACT	CAC	GCC	AAT	GGC	TCC	ATC	AAG	6807
Asp	Phe	Ile	Tyr	Trp	Ser	Asp	Arg	Thr	His	Ala	Asn	Gly	Ser	Ile	Lys	
			2110				2115								2120	
CGC	GGC	TGC	AAA	GAC	AAT	GCT	ACA	GAC	TCC	GTG	CCT	CTG	AGG	ACA	GGC	6855
Arg	Gly	Cys	Lys	Asp	Asn	Ala	Thr	Asp	Ser	Val	Pro	Leu	Arg	Thr	Gly	
			2125				2130								2135	
ATT	GGT	GTT	CAG	CTT	AAA	GAC	ATC	AAG	GTC	TTC	AAC	AGG	GAC	AGG	CAG	6903
Ile	Gly	Val	Gln	Leu	Lys	Asp	Ile	Lys	Val	Phe	Asn	Arg	Asp	Arg	Gln	
			2140				2145				2150					
AAG	GGT	ACC	AAT	GTG	TGC	GCG	GTA	GCC	AAC	GGC	GGG	TGC	CAG	CAG	CTC	6951
Lys	Gly	Thr	Asn	Val	Cys	Ala	Val	Ala	Asn	Gly	Gly	Cys	Gln	Gln	Leu	
			2155				2160			2165					2170	
TGC	TTG	TAT	CGG	GGT	GGC	GGA	CAG	CGA	GCC	TGT	GCC	TGT	GCC	CAC	GGG	6999
Cys	Leu	Tyr	Arg	Gly	Gly	Gly	Gln	Arg	Ala	Cys	Ala	Cys	Ala	His	Gly	
			2175					2180							2185	
ATG	CTG	GCA	GAA	GAC	GGG	GCC	TCA	TGC	CGA	GAG	TAC	GCT	GGC	TAC	CTG	7047
Met	Leu	Ala	Glu	Asp	Gly	Ala	Ser	Cys	Arg	Glu	Tyr	Ala	Gly	Tyr	Leu	
			2190				2195				2200					
CTC	TAC	TCA	GAG	CGG	ACC	ATC	CTC	AAG	AGC	ATC	CAC	CTG	TCG	GAT	GAG	7095
Leu	Tyr	Ser	Glu	Arg	Thr	Ile	Leu	Lys	Ser	Ile	His	Leu	Ser	Asp	Glu	
			2205				2210								2215	
CGT	AAC	CTC	AAC	GCA	CCG	GTG	CAG	CCC	TTT	GAA	GAC	CCC	GAG	CAC	ATG	7143
Arg	Asn	Leu	Asn	Ala	Pro	Val	Gln	Pro	Phe	Glu	Asp	Pro	Glu	His	Met	
			2220				2225				2230					
AAA	AAT	GTC	ATC	GCC	CTG	GCC	TTT	GAC	TAC	CGA	GCA	GGC	ACC	TCC	CCG	7191
Lys	Asn	Val	Ile	Ala	Leu	Ala	Phe	Asp	Tyr	Arg	Ala	Gly	Thr	Ser	Pro	
			2235				2240			2245					2250	

FIG.6A-13

## 24/65

GGG ACC CCT AAC CGC ATC TTC TTC AGT GAC ATC CAC TTT GGG AAC ATC				7239
Gly Thr Pro Asn Arg Ile Phe Phe Ser Asp Ile His Phe Gly Asn Ile				
2255	2260	2265		
CAG CAG ATC AAT GAC GAT GGC TCG GGC AGG ACC ACC ATC GTG GAA AAT				7287
Gln Gln Ile Asn Asp Asp Gly Ser Gly Arg Thr Thr Ile Val Glu Asn				
2270	2275	2280		
GTG GGC TCT GTG GAA GGC CTG GCC TAT CAC CGT GGC TGG GAC ACA CTG				7335
Val Gly Ser Val Glu Gly Leu Ala Tyr His Arg Gly Trp Asp Thr Leu				
2285	2290	2295		
TAC TGG ACA AGC TAC ACC ACA TCC ACC ATC ACC CGC CAC ACC GTG GAC				7383
Tyr Trp Thr Ser Tyr Thr Ser Thr Ile Thr Arg His Thr Val Asp				
2300	2305	2310		
CAG ACT CGC CCA GGG GCC TTC GAG AGG GAG ACA GTC ATC ACC ATG TCC				7431
Gln Thr Arg Pro Gly Ala Phe Glu Arg Glu Thr Val Ile Thr Met Ser				
2315	2320	2325	2330	
GGA GAC GAC CAC CCG AGA GCC TTT GTG CTG GAT GAG TGC CAG AAC CTG				7479
Gly Asp Asp His Pro Arg Ala Phe Val Leu Asp Glu Cys Gln Asn Leu				
2335	2340	2345		
ATG TTC TGG ACC AAT TGG AAC GAG CTC CAT CCA AGC ATC ATG CGG GCA				7527
Met Phe Trp Thr Asn Trp Asn Glu Leu His Pro Ser Ile Met Arg Ala				
2350	2355	2360		
GCC CTA TCC GGA GCC AAC GTC CTG ACC CTC ATT GAG AAG GAC ATC CGC				7575
Ala Leu Ser Gly Ala Asn Val Leu Thr Leu Ile Glu Lys Asp Ile Arg				
2365	2370	2375		
ACG CCC AAT GGG TTG GCC ATC GAC CAC CGG GCG GAG AAG CTG TAC TTC				7623
Thr Pro Asn Gly Leu Ala Ile Asp His Arg Ala Glu Lys Leu Tyr Phe				
2380	2385	2390		
TCG GAT GCC ACC TTG GAC AAG ATC GAG CGC TGC GAG TAC GAC GGC TCC				7671
Ser Asp Ala Thr Leu Asp Lys Ile Glu Arg Cys Glu Tyr Asp Gly Ser				
2395	2400	2405	2410	
CAC CGC TAT GTG ATC CTA AAG TCG GAG CCC GTC CAC CCC TTT GGG TTG				7719
His Arg Tyr Val Ile Leu Lys Ser Glu Pro Val His Pro Phe Gly Leu				
2415	2420	2425		

FIG.6A-14

## 25/65

GCG GTG TAC GGA GAG CAC ATT TTC TGG ACT GAC TGG GTG CGG CGG GCT	7767
Ala Val Tyr Gly Glu His Ile Phe Trp Thr Asp Trp Val Arg Arg Ala	
2430 2435 2440	
GTG CAG CGA GCC AAC AAG TAT GTG GGC AGC GAC ATG AAG CTG CTT CGG	7815
Val Gln Arg Ala Asn Lys Tyr Val Gly Ser Asp Met Lys Leu Leu Arg	
2445 2450 2455	
GTG GAC ATT CCC CAG CAA CCC ATG GGC ATC ATC GCC GTG GCC AAT GAC	7863
Val Asp Ile Pro Gln Gln Pro Met Gly Ile Ile Ala Val Ala Asn Asp	
2460 2465 2470	
ACC AAC AGC TGT GAA CTC TCC CCC TGC CGT ATC AAC AAT GGA GGC TGC	7911
Thr Asn Ser Cys Glu Leu Ser Pro Cys Arg Ile Asn Asn Gly Gly Cys	
2475 2480 2485 2490	
CAG GAT CTG TGT CTG CTC ACC CAC CAA GGC CAC GTC AAC TGT TCC TGT	7959
Gln Asp Leu Cys Leu Leu Thr His Gln Gly His Val Asn Cys Ser Cys	
2495 2500 2505	
CGA GGG GGC CGG ATC CTC CAG GAG GAC TTC ACC TGC CGG GCT GTG AAC	8007
Arg Gly Arg Ile Leu Gln Glu Asp Phe Thr Cys Arg Ala Val Asn	
2510 2515 2520	
TCC TCT TGT CGG GCA CAA GAT GAG TTT GAG TGT GCC AAT GGG GAA TGT	8055
Ser Ser Cys Arg Ala Gln Asp Glu Phe Glu Cys Ala Asn Gly Glu Cys	
2525 2530 2535	
ATC AGC TTC AGC CTC ACC TGT GAT GGC GTC TCC CAC TGC AAG GAC AAG	8103
Ile Ser Phe Ser Leu Thr Cys Asp Gly Val Ser His Cys Lys Asp Lys	
2540 2545 2550	
TCC GAT GAG AAG CCC TCC TAC TGC AAC TCA CGC CGC TGC AAG AAG ACT	8151
Ser Asp Glu Lys Pro Ser Tyr Cys Asn Ser Arg Arg Cys Lys Thr	
2555 2560 2565 2570	
TTC CGC CAG TGT AAC AAT GGC CGC TGT GTA TCC AAC ATG CTG TGG TGC	8199
Phe Arg Gln Cys Asn Asn Gly Arg Cys Val Ser Asn Met Leu Trp Cys	
2575 2580 2585	
AAT GGG GTG GAT TAC TGT GGG GAT GGC TCT GAT GAG ATA CCT TGC AAC	8247
Asn Gly Val Asp Tyr Cys Gly Asp Gly Ser Asp Glu Ile Pro Cys Asn	
2590 2595 2600	

FIG.6A-15

26/65

AAG ACT GCC TGT GGT GTG GGT GAG TTC CGC TGC CGG GAT GGG TCC TGC	8295
Lys Thr Ala Cys Gly Val Gly Glu Phe Arg Cys Arg Asp Gly Ser Cys	
2605 2610 2615	
ATC GGG AAC TCC AGT CGC TGC AAC CAG TTT GTG GAT TGT GAG GAT GCC	8343
Ile Gly Asn Ser Ser Arg Cys Asn Gln Phe Val Asp Cys Glu Asp Ala	
2620 2625 2630	
TCG GAT GAG ATG AAT TGC AGT GCC ACA GAC TGC AGC AGC TAT TTC CGC	8391
Ser Asp Glu Met Asn Cys Ser Ala Thr Asp Cys Ser Ser Tyr Phe Arg	
2635 2640 2645 2650	
CTG GGC GTG AAA GGT GTC CTC TTC CAG CCG TGC GAG CGG ACA TCC CTG	8439
Leu Gly Val Lys Gly Val Leu Phe Gln Pro Cys Glu Arg Thr Ser Leu	
2655 2660 2665	
TGC TAC GCA CCT AGC TGG GTG TGT GAT GGC GCC AAC GAC TGT GGA GAC	8487
Cys Tyr Ala Pro Ser Trp Val Cys Asp Gly Ala Asn Asp Cys Gly Asp	
2670 2675 2680	
TAC AGC GAT GAA CGT GAC TGT CCA GGT GTG AAG CGC CCT AGG TGC CCG	8535
Tyr Ser Asp Glu Arg Asp Cys Pro Gly Val Lys Arg Pro Arg Cys Pro	
2685 2690 2695	
CTC AAT TAC TTT GCC TGC CCC AGC GGG CGC TGT ATC CCC ATG AGC TGG	8583
Leu Asn Tyr Phe Ala Cys Pro Ser Gly Arg Cys Ile Pro Met Ser Trp	
2700 2705 2710	
ACG TGT GAC AAG GAG GAT GAC TGT GAG AAC GGC GAG GAT GAG ACC CAC	8631
Thr Cys Asp Lys Glu Asp Asp Cys Glu Asn Gly Glu Asp Glu Thr His	
2715 2720 2725 2730	
TGC AAC AAG TTC TGC TCA GAG GCA CAG TTC GAG TGC CAG AAC CAC CGG	8679
Cys Asn Lys Phe Cys Ser Glu Ala Gln Phe Glu Cys Gln Asn His Arg	
2735 2740 2745	
TGT ATC TCC AAG CAG TGG CTG TGT GAC GGT AGC GAT GAT TGC GGG GAT	8727
Cys Ile Ser Lys Gln Trp Leu Cys Asp Gly Ser Asp Asp Cys Gly Asp	
2750 2755 2760	
GGC TCC GAT GAG GCA GCT CAC TGT GAA GGC AAG ACA TGT GGC CCC TCC	8775
Gly Ser Asp Glu Ala Ala His Cys Glu Gly Lys Thr Cys Gly Pro Ser	
2765 2770 2775	

FIG.6A-16

## 27/65

TCC	TTC	TCC	TGT	CCC	GGC	ACC	CAC	GTG	TGT	GTC	CCT	GAG	CGC	TGG	CTC	8823
Ser	Phe	Ser	Cys	Pro	Gly	Thr	His	Val	Cys	Val	Pro	Glu	Arg	Trp	Leu	
2780				2785						2790						
TGT	GAT	GGC	GAC	AAG	GAC	TGT	ACC	GAT	GGC	GCG	GAT	GAG	AGT	GTC	ACT	8871
Cys	Asp	Gly	Asp	Lys	Asp	Cys	Thr	Asp	Gly	Ala	Asp	Glu	Ser	Val	Thr	
2795				2800				2805						2810		
GCT	GGC	TGC	CTG	TAC	AAC	AGC	ACC	TGT	GAT	GAC	CGT	GAG	TTC	ATG	TGC	8919
Ala	Gly	Cys	Leu	Tyr	Asn	Ser	Thr	Cys	Asp	Asp	Arg	Glu	Phe	Met	Cys	
				2815				2820					2825			
CAG	AAC	CGC	TTG	TGT	ATT	CCC	AAG	CAT	TTC	GTG	TGC	GAC	CAT	GAC	CGT	8967
Gln	Asn	Arg	Leu	Cys	Ile	Pro	Lys	His	Phe	Val	Cys	Asp	His	Asp	Arg	
				2830				2835				2840				
GAC	TGT	GCT	GAT	GGC	TCT	GAT	GAA	TCC	CCT	GAG	TGT	GAG	TAC	CCA	ACC	9015
Asp	Cys	Ala	Asp	Gly	Ser	Asp	Glu	Ser	Pro	Glu	Cys	Glu	Tyr	Pro	Thr	
				2845				2850				2855				
TGC	GGG	CCC	AAT	GAA	TTC	CGC	TGT	GCC	AAT	GGG	CGT	TGT	CTG	AGC	TCC	9063
Cys	Gly	Pro	Asn	Glu	Phe	Arg	Cys	Ala	Asn	Gly	Arg	Cys	Leu	Ser	Ser	
				2860				2865				2870				
CGT	CAG	TGG	GAA	TGT	GAT	GGG	GAG	AAT	GAC	TGT	CAC	GAC	CAC	AGC	GAT	9111
Arg	Gln	Trp	Glu	Cys	Asp	Gly	Glu	Asn	Asp	Cys	His	Asp	His	Ser	Asp	
				2875				2880			2885			2890		
GAG	GCT	CCC	AAG	AAC	CCA	CAC	TGC	ACC	AGC	CCA	GAG	CAC	AAA	TGC	AAT	9159
Glu	Ala	Pro	Lys	Asn	Pro	His	Cys	Thr	Ser	Pro	Glu	His	Lys	Cys	Asn	
				2895				2900				2905				
GCC	TCA	TCA	CAG	TTC	CTG	TGC	AGC	AGC	GGG	CGC	TGC	GTG	GCT	GAG	GCG	9207
Ala	Ser	Ser	Gln	Phe	Leu	Cys	Ser	Ser	Gly	Arg	Cys	Val	Ala	Glu	Ala	
				2910				2915				2920				
TTG	CTC	TGC	AAC	GGC	CAG	GAC	GAC	TGT	GGG	GAC	GGT	TCA	GAC	GAA	CGC	9255
Leu	Leu	Cys	Asn	Gly	Gln	Asp	Asp	Cys	Gly	Asp	Gly	Ser	Asp	Glu	Arg	
				2925				2930				2935				
GGG	TGC	CAT	GTC	AAC	GAG	TGT	CTC	AGC	CGC	AAG	CTC	AGT	GGC	TGC	AGT	9303
Gly	Cys	His	Val	Asn	Glu	Cys	Leu	Ser	Arg	Lys	Leu	Ser	Gly	Cys	Ser	
				2940				2945			2950					

FIG.6A-17

## 28/65

CAG GAC TGC GAG GAC CTC AAG ATA GGC TTT AAG TGC CGC TGT CGC CCG Gln Asp Cys Glu Asp Leu Lys Ile Gly Phe Lys Cys Arg Cys Arg Pro 2955	2960	2965	2970	9351
GGC TTC CGG CTA AAG GAC GAT GGC AGG ACC TGT GCC GAC CTG GAT GAG Gly Phe Arg Leu Lys Asp Asp Gly Arg Thr Cys Ala Asp Leu Asp Glu 2975	2980	2985		9399
TGC AGC ACC ACC TTC CCC TGC AGC CAG CTC TGC ATC AAC ACC CAC GGA Cys Ser Thr Thr Phe Pro Cys Ser Gln Leu Cys Ile Asn Thr His Gly 2990	2995	3000		9447
AGT TAC AAG TGT CTG TGT GTG GAG GGC TAT GCA CCC CGT GGC GGT GAC Ser Tyr Lys Cys Leu Cys Val Glu Gly Tyr Ala Pro Arg Gly Gly Asp 3005	3010	3015		9495
CCC CAC AGC TGC AAA GCT GTG ACC GAT GAG GAG CCA TTT CTC ATC TTT Pro His Ser Cys Lys Ala Val Thr Asp Glu Glu Pro Phe Leu Ile Phe 3020	3025	3030		9543
GCC AAC CGG TAC TAC CTG CGG AAG CTC AAC CTG GAC GGC TCC AAC TAC Ala Asn Arg Tyr Tyr Leu Arg Lys Leu Asn Leu Asp Gly Ser Asn Tyr 3035	3040	3045	3050	9591
ACA CTG CTT AAG CAG GGC CTG AAC AAT GCG GTC GCC TTG GCA TTT GAC Thr Leu Leu Lys Gln Gly Leu Asn Asn Ala Val Ala Leu Ala Phe Asp 3055	3060	3065		9639
TAC CGA GAG CAG ATG ATC TAC TGG ACG GGC GTG ACC ACC CAG GGC AGC Tyr Arg Glu Gln Met Ile Tyr Trp Thr Gly Val Thr Thr Gln Gly Ser 3070	3075	3080		9687
ATG ATT CGC AGG ATG CAC CTC AAC GGC AGC AAC GTG CAG GTT CTG CAC Met Ile Arg Arg Met His Leu Asn Gly Ser Asn Val Gln Val Leu His 3085	3090	3095		9735
CGG ACG GGC CTT AGT AAC CCA GAT GGG CTC GCT GTG GAC TGG GTG GGT Arg Thr Gly Leu Ser Asn Pro Asp Gly Leu Ala Val Asp Trp Val Gly 3100	3105	3110		9783
GGC AAC CTG TAC TGG TGT GAC AAG GGC AGA GAT ACC ATT GAG GTG TCC Gly Asn Leu Tyr Trp Cys Asp Lys Gly Arg Asp Thr Ile Glu Val Ser 3115	3120	3125	3130	9831

## 29/65

AAG CTT AAC GGG GCC TAT CGG ACA GTG CTG GTC AGC TCT GGC CTC CGG	9879
Lys Leu Asn Gly Ala Tyr Arg Thr Val Leu Val Ser Ser Gly Leu Arg	
3135 3140 3145	
GAG CCC AGA GCT CTG GTA GTG GAT GTA CAG AAT GGG TAC CTG TAC TGG	9927
Glu Pro Arg Ala Leu Val Val Asp Val Gln Asn Gly Tyr Leu Tyr Trp	
3150 3155 3160	
ACA GAC TGG GGT GAC CAC TCA CTG ATC GGC CGG ATT GGC ATG GAT GGA	9975
Thr Asp Trp Gly Asp His Ser Leu Ile Gly Arg Ile Gly Met Asp Gly	
3165 3170 3175	
TCT GGC CGC AGC ATC ATC GTG GAC ACT AAG ATC ACA TGG CCC AAT GGC	10023
Ser Gly Arg Ser Ile Ile Val Asp Thr Lys Ile Thr Trp Pro Asn Gly	
3180 3185 3190	
CTG ACC GTG GAC TAC GTC ACG GAA CGC ATC TAC TGG GCT GAC GCC CGT	10071
Leu Thr Val Asp Tyr Val Thr Glu Arg Ile Tyr Trp Ala Asp Ala Arg	
3195 3200 3205 3210	
GAG GAC TAC ATC GAG TTC GCC AGC CTG GAT GGC TCC AAC CGT CAC GTT	10119
Glu Asp Tyr Ile Glu Phe Ala Ser Leu Asp Gly Ser Asn Arg His Val	
3215 3220 3225	
GTG CTG AGC CAA GAC ATC CCA CAC ATC TTT GCG CTG ACC CTA TTT GAA	10167
Val Leu Ser Gln Asp Ile Pro His Ile Phe Ala Leu Thr Leu Phe Glu	
3230 3235 3240	
GAC TAC GTC TAC TGG ACA GAC TGG GAA ACG AAG TCC ATC AAC CGG GCC	10215
Asp Tyr Val Tyr Trp Thr Asp Trp Glu Thr Lys Ser Ile Asn Arg Ala	
3245 3250 3255	
CAC AAG ACC ACG GGT GCC AAC AAA ACA CTC CTC ATC AGC ACC CTG CAC	10263
His Lys Thr Thr Gly Ala Asn Lys Thr Leu Leu Ile Ser Thr Leu His	
3260 3265 3270	
CGG CCC ATG GAC TTA CAT GTA TTC CAC GCC CTG CGC CAG CCA GAT GTG	10311
Arg Pro Met Asp Leu His Val Phe His Ala Leu Arg Gln Pro Asp Val	
3275 3280 3285 3290	
CCC AAT CAC CCC TGC AAA GTC AAC AAT GGT GGC TGC AGC AAC CTG TGC	10359
Pro Asn His Pro Cys Lys Val Asn Asn Gly Gly Cys Ser Asn Leu Cys	
3295 3300 3305	

## 30/65

CTG CTG TCC CCT GGG GGT GGT CAC AAG TGC GCC TGC CCC ACC AAC TTC	10407
Leu Leu Ser Pro Gly Gly Gly His Lys Cys Ala Cys Pro Thr Asn Phe	
3310 3315 3320	
TAT CTG GGT GGC GAT GGC CGT ACC TGT GTG TCC AAC TGC ACA GCA AGC	10455
Tyr Leu Gly Gly Asp Gly Arg Thr Cys Val Ser Asn Cys Thr Ala Ser	
3325 3330 3335	
CAG TTT GTG TGC AAA AAT GAC AAG TGC ATC CCC TTC TGG TGG AAG TGT	10503
Gln Phe Val Cys Lys Asn Asp Lys Cys Ile Pro Phe Trp Trp Lys Cys	
3340 3345 3350	
GAC ACG GAG GAC GAC TGT GGG GAT CAC TCA GAC GAG CCT CCA GAC TGT	10551
Asp Thr Glu Asp Asp Cys Gly Asp His Ser Asp Glu Pro Pro Asp Cys	
3355 3360 3365 3370	
CCC GAG TTC AAG TGC CGC CCA GGC CAG TTC CAG TGC TCC ACC GGC ATC	10599
Pro Glu Phe Lys Cys Arg Pro Gly Gln Phe Gln Cys Ser Thr Gly Ile	
3375 3380 3385	
TGC ACC AAC CCT GCC TTC ATC TGT GAT GGG GAC AAT GAC TGC CAA GAC	10647
Cys Thr Asn Pro Ala Phe Ile Cys Asp Gly Asp Asn Asp Cys Gln Asp	
3390 3395 3400	
AAT AGT GAC GAG GCC AAT TGC GAC ATT CAC GTC TGC TTG CCC AGC CAA	10695
Asn Ser Asp Glu Ala Asn Cys Asp Ile His Val Cys Leu Pro Ser Gln	
3405 3410 3415	
TTC AAG TGC ACC AAC ACC CGC TGC ATT CCT GGC ATC TTC CGT TGC	10743
Phe Lys Cys Thr Asn Thr Asn Arg Cys Ile Pro Gly Ile Phe Arg Cys	
3420 3425 3430	
AAT GGG CAG GAC AAC TGC GGG GAC GGC GAG GAT GAG CGG GAT TGC CCT	10791
Asn Gly Gln Asp Asn Cys Gly Asp Gly Glu Asp Glu Arg Asp Cys Pro	
3435 3440 3445 3450	
GAG GTG ACC TGC GCC CCC AAC CAG TTC CAG TGC TCC ATC ACC AAG CGC	10839
Glu Val Thr Cys Ala Pro Asn Gln Phe Gln Cys Ser Ile Thr Lys Arg	
3455 3460 3465	
TGC ATC CCT CGC GTC TGG GTC TGT GAC AGG GAT AAT CAC TGT GTG GAC	10887
Cys Ile Pro Arg Val Trp Val Cys Asp Arg Asp Asn His Cys Val Asp	
3470 3475 3480	

## 31/65

GGC AGT GAT GAG CCT GCC AAC TGT ACC CAA ATG ACC TGT GGA GTG GAT				10935
Gly Ser Asp Glu Pro Ala Asn Cys Thr Gln Met Thr Cys Gly Val Asp				
3485	3490	3495		
GAG TTC CGC TGC AAG GAT TCT GGC CGC TGC ATC CCC GCG CGC TGG AAG				10983
Glu Phe Arg Cys Lys Asp Ser Gly Arg Cys Ile Pro Ala Arg Trp Lys				
3500	3505	3510		
TGT GAC GGA GAA GAT GAC TGT GGG GAT GGT TCA GAT GAG CCC AAG GAA				11031
Cys Asp Gly Glu Asp Asp Cys Gly Asp Gly Ser Asp Glu Pro Lys Glu				
3515	3520	3525	3530	
GAG TGT GAT GAG CGC ACC TGT GAG CCA TAC CAG TTC CGC TGC AAA AAC				11079
Glu Cys Asp Glu Arg Thr Cys Glu Pro Tyr Gln Phe Arg Cys Lys Asn				
3535	3540	3545		
AAC CGC TGT GTC CCA GGC CGT TGG CAA TGT GAC TAC GAC AAC GAC TGC				11127
Asn Arg Cys Val Pro Gly Arg Trp Gln Cys Asp Tyr Asn Asp Cys				
3550	3555	3560		
GGA GAT AAC TCG GAC GAG GAG AGC TGC ACA CCT CGG CCC TGC TCT GAG				11175
Gly Asp Asn Ser Asp Glu Glu Ser Cys Thr Pro Arg Pro Cys Ser Glu				
3565	3570	3575		
AGT GAG TTT TTC TGT GCC AAT GGC CGC TGC ATC GCT GGG CGC TGG AAG				11223
Ser Glu Phe Phe Cys Ala Asn Gly Arg Cys Ile Ala Gly Arg Trp Lys				
3580	3585	3590		
TGT GAT GGG GAC CAT GAC TGT GCC GAC GGC TCA GAC GAG AAA GAC TGC				11271
Cys Asp Gly Asp His Asp Cys Ala Asp Gly Ser Asp Glu Lys Asp Cys				
3595	3600	3605	3610	
ACC CCC CGC TGT GAT ATG GAC CAG TTC CAG TGC AAG AGT GGC CAC TGC				11319
Thr Pro Arg Cys Asp Met Asp Gln Phe Gln Cys Lys Ser Gly His Cys				
3615	3620	3625		
ATC CCC CTG CGC TGG CCG TGT GAC GCG GAT GCT GAC TGT ATG GAC GGC				11367
Ile Pro Leu Arg Trp Pro Cys Asp Ala Asp Ala Asp Cys Met Asp Gly				
3630	3635	3640		
AGT GAC GAG GAA GCC TGT GGC ACT GGG GTG AGG ACC TGC CCA TTG GAT				11415
Ser Asp Glu Glu Ala Cys Gly Thr Gly Val Arg Thr Cys Pro Leu Asp				
3645	3650	3655		

## 32/65

GAG	TTT	CAA	TGT	AAC	AAC	ACC	TTG	TGC	AAG	CCG	CTG	GCC	TGG	AAG	TGT	11463
Glu		Gln		Cys	Asn	Asn	Thr	Leu	Cys	Lys	Pro	Leu	Ala	Trp	Lys	Cys
3660				3665						3670						
GAT	GGA	GAG	GAC	GAC	TGT	GGG	GAC	AAC	TCA	GAT	GAG	AAC	CCC	GAG	GAA	11511
Asp	Gly	Glu	Asp	Asp	Cys	Gly	Asp	Asn	Ser	Asp	Glu	Asn	Pro	Glu	Glu	
3675				3680					3685				3690			
TGC	GCC	CGG	TTC	ATC	TGC	CCT	CCC	AAC	CGG	CCT	TTC	CGC	TGC	AAG	AAT	11559
Cys	Ala	Arg	Phe	Ile	Cys	Pro	Pro	Asn	Arg	Pro	Phe	Arg	Cys	Lys	Asn	
				3695					3700				3705			
GAC	CGA	GTC	TGC	CTG	TGG	ATT	GGG	CGC	CAG	TGT	GAT	GGC	GTG	GAC	AAC	11607
Asp	Arg	Val	Cys	Leu	Trp	Ile	Gly	Arg	Gln	Cys	Asp	Gly	Val	Asp	Asn	
				3710					3715				3720			
TGT	GGA	GAT	GGG	ACT	GAC	GAG	GAG	GAC	TGT	GAG	CCC	CCC	ACG	GCC	CAG	11655
Cys	Gly	Asp	Gly	Thr	Asp	Glu	Glu	Asp	Cys	Glu	Pro	Pro	Thr	Ala	Gln	
				3725					3730				3735			
AAC	CCC	CAC	TGC	AAA	GAC	AAG	AAG	GAG	TTC	CTG	TGC	CGA	AAC	CAG	CGC	11703
Asn	Pro	His	Cys	Lys	Asp	Lys	Lys	Glu	Phe	Leu	Cys	Arg	Asn	Gln	Arg	
				3740					3745				3750			
TGT	CTA	TCA	TCC	TCC	CTG	CGC	TGT	AAC	ATG	TTC	GAT	GAC	TGC	GGC	GAT	11751
Cys	Leu	Ser	Ser	Ser	Leu	Arg	Cys	Asn	Met	Phe	Asp	Asp	Cys	Gly	Asp	
				3755					3760				3765			3770
GGC	TCC	GAT	GAA	GAA	GAT	TGC	AGC	ATC	GAC	CCC	AAG	CTG	ACC	AGC	TGT	11799
Gly	Ser	Asp	Glu	Glu	Asp	Cys	Ser	Ile	Asp	Pro	Lys	Leu	Thr	Ser	Cys	
				3775					3780				3785			
GCC	ACC	AAT	GCC	AGC	ATG	TGT	GGG	GAC	GAA	GCT	CGT	TGT	GTG	CGC	ACT	11847
Ala	Thr	Asn	Ala	Ser	Met	Cys	Gly	Asp	Glu	Ala	Arg	Cys	Val	Arg	Thr	
				3790					3795				3800			
GAG	AAA	GCT	GCC	TAC	TGT	GCC	TGC	CGC	TCG	GGC	TTC	CAT	ACT	GTG	CCG	11895
Glu	Lys	Ala	Ala	Tyr	Cys	Ala	Cys	Arg	Ser	Gly	Phe	His	Thr	Val	Pro	
				3805					3810				3815			
GGC	CAG	CCC	GGA	TGC	CAG	GAC	ATC	AAC	GAG	TGC	CTG	CGC	TTT	GGT	ACC	11943
Gly	Gln	Pro	Gly	Cys	Gln	Asp	Ile	Asn	Glu	Cys	Leu	Arg	Phe	Gly	Thr	
				3820					3825				3830			

FIG.6A-22

## 33/65

TGC	TCT	CAG	CTC	TGG	AAC	AAA	CCC	AAG	GGA	GGC	CAC	CTC	TGC	AGC	TGT	11991
Cys	Ser	Gln	Leu	Trp	Asn	Lys	Pro	Lys	Gly	Gly	His	Leu	Cys	Ser	Cys	
3835			3840				3845					3850				
GCC	CGC	AAC	TTC	ATG	AAG	ACA	CAC	AAC	ACC	TGC	AAA	GCT	GAA	GGC	TCC	12039
Ala	Arg	Asn	Phe	Met	Lys	Thr	His	Asn	Thr	Cys	Lys	Ala	Glu	Gly	Ser	
3855				3860			3865									
GAG	TAC	CAG	GTG	CTA	TAC	ATC	GCG	GAT	GAC	AAC	GAG	ATC	CGC	AGC	TTG	12087
Glu	Tyr	Gln	Val	Leu	Tyr	Ile	Ala	Asp	Asp	Asn	Glu	Ile	Arg	Ser	Leu	
3870				3875			3880									
TTC	CCG	GGC	CAC	CCC	CAC	TCA	GCC	TAC	GAG	CAG	ACA	TTC	CAG	GGC	GAT	12135
Phe	Pro	Gly	His	Pro	His	Ser	Ala	Tyr	Glu	Gln	Thr	Phe	Gln	Gly	Asp	
3885				3890			3895									
GAG	AGT	GTC	CGC	ATA	GAT	GCC	ATG	GAT	GTC	CAT	GTC	AAG	GCC	GGC	CGT	12183
Glu	Ser	Val	Arg	Ile	Asp	Ala	Met	Asp	Val	His	Val	Lys	Ala	Gly	Arg	
3900				3905			3910									
GTC	TAC	TGG	ACT	AAC	TGG	CAC	ACG	GGC	ACA	ATC	TCC	TAC	AGG	AGC	CTG	12231
Val	Tyr	Trp	Thr	Asn	Trp	His	Thr	Gly	Thr	Ile	Ser	Tyr	Arg	Ser	Leu	
3915				3920			3925			3930						
CCC	CCT	GCC	GCC	CCT	CCT	ACC	ACT	TCC	AAC	CGC	CAC	CGG	AGG	CAG	ATC	12279
Pro	Pro	Ala	Ala	Pro	Pro	Thr	Thr	Ser	Asn	Arg	His	Arg	Arg	Gln	Ile	
3935				3940			3945									
GAC	CGG	GGT	GTC	ACC	CAC	CTC	AAT	ATT	TCA	GGG	CTG	AAG	ATG	CCG	AGG	12327
Asp	Arg	Gly	Val	Thr	His	Leu	Asn	Ile	Ser	Gly	Leu	Lys	Met	Pro	Arg	
3950				3955			3960									
GGT	ATC	GCT	ATC	GAC	TGG	GTG	GCC	GGG	AAT	GTG	TAC	TGG	ACC	GAT	TCC	12375
Gly	Ile	Ala	Ile	Asp	Trp	Val	Ala	Gly	Asn	Val	Tyr	Trp	Thr	Asp	Ser	
3965				3970			3975									
GGC	CGA	GAC	GTG	ATT	GAG	GTG	GCG	CAA	ATG	AAG	GGC	GAG	AAC	CGC	AAG	12423
Gly	Arg	Asp	Val	Ile	Glu	Val	Ala	Gln	Met	Lys	Gly	Glu	Asn	Arg	Lys	
3980				3985			3990									
ACG	CTC	ATC	TCG	GGC	ATG	ATT	GAT	GAG	CCC	CAT	GCC	ATC	GTG	GTG	GAC	12471
Thr	Leu	Ile	Ser	Gly	Met	Ile	Asp	Glu	Pro	His	Ala	Ile	Val	Val	Asp	
3995				4000			4005			4010						

FIG.6A-23

## 34/65

CCT CTG AGG GGC ACC ATG TAC TGG TCA GAC TGG GGG AAC CAC CCC AAG				12519
Pro Leu Arg Gly Thr Met Tyr Trp Ser Asp Trp Gly Asn His Pro Lys				
4015	4020	4025		
ATT GAA ACA GCA GCG ATG GAT GGC ACC CTT CGG GAG ACT CTC GTG CAA				12567
Ile Glu Thr Ala Ala Met Asp Gly Thr Leu Arg Glu Thr Leu Val Gln				
4030	4035	4040		
GAC AAC ATT CAG TGG CCT ACA GGG CTG GCT GTG GAC TAT CAC AAT GAA				12615
Asp Asn Ile Gln Trp Pro Thr Gly Leu Ala Val Asp Tyr His Asn Glu				
4045	4050	4055		
CGG CTC TAC TGG GCA GAT GCC AAG CTT TCG GTC ATC GCC AGC ATC CGG				12663
Arg Leu Tyr Trp Ala Asp Ala Lys Leu Ser Val Ile Gly Ser Ile Arg				
4060	4065	4070		
CTC AAC GGC ACT GAC CCC ATT GTG GCT GCT GAC AGC AAA CGA GGC CTA				12711
Leu Asn Gly Thr Asp Pro Ile Val Ala Asp Ser Lys Arg Gly Leu				
4075	4080	4085	4090	
AGT CAC CCC TTC AGC ATC GAT GTG TTT GAA GAC TAC ATC TAC GGA GTC				12759
Ser His Pro Phe Ser Ile Asp Val Phe Glu Asp Tyr Ile Tyr Gly Val				
4095	4100	4105		
ACT TAC ATC AAT AAT CGT GTC TTC AAG ATC CAC AAG TTT GGA CAC AGC				12807
Thr Tyr Ile Asn Asn Arg Val Phe Lys Ile His Lys Phe Gly His Ser				
4110	4115	4120		
CCC TTG TAC AAC CTA ACT GGG GGC CTG AGC CAT GCC TCT GAT GTA GTC				12855
Pro Leu Tyr Asn Leu Thr Gly Gln Leu Ser His Ala Ser Asp Val Val				
4125	4130	4135		
CTT TAC CAT CAA CAC AAG CAG CCT GAA GTG ACC AAC CCC TGT GAC CGC				12903
Leu Tyr His Gln His Lys Gln Pro Glu Val Thr Asn Pro Cys Asp Arg				
4140	4145	4150		
AAG AAA TGC GAA TGG CTG TGT CTG CTG AGC CCC AGC GGG CCT GTC TGC				12951
Lys Lys Cys Glu Trp Leu Cys Leu Leu Ser Pro Ser Gly Pro Val Cys				
4155	4160	4165	4170	
ACC TGT CCC AAT GGA AAG AGG CTG GAT AAT GGC ACC TGT GTG CCT GTG				12999
Thr Cys Pro Asn Gly Lys Arg Leu Asp Asn Gly Thr Cys Val Pro Val				
4175	4180	4185		

## 35/65

CCC TCT CCA ACA CCC CCT CCA GAT GCC CCT AGG CCT GGA ACC TGC ACT	13047
Pro Ser Pro Thr Pro Pro Asp Ala Pro Arg Pro Gly Thr Cys Thr	
4190 4195 4200	
CTG CAG TGC TTC AAT GGT GGT AGT TGT TTC CTC AAC GCT CGG AGG CAG	13095
Leu Gln Cys Phe Asn Gly Gly Ser Cys Phe Leu Asn Ala Arg Arg Gln	
4205 4210 4215	
CCC AAG TGC CGT TGC CAG CCC CGT TAC ACA GGC GAT AAG TGT GAG CTG	13143
Pro Lys Cys Arg Cys Gln Pro Arg Tyr Thr Gly Asp Lys Cys Glu Leu	
4220 4225 4230	
GAT CAG TGC TGG GAA TAC TGT CAC AAC GGA GGC ACC TGT GCG GCT TCC	13191
Asp Gln Cys Trp Glu Tyr Cys His Asn Gly Gly Thr Cys Ala Ala Ser	
4235 4240 4245 4250	
CCA TCT GGC ATG CCC ACG TGC CGC TGT CCC ACT GGC TTC ACG GGC CCC	13239
Pro Ser Gly Met Pro Thr Cys Arg Cys Pro Thr Gly Phe Thr Gly Pro	
4255 4260 4265	
AAA TGC ACC GCA CAG GTG TGT GCA GGC TAC TGC TCT AAC AAC AGC ACC	13287
Lys Cys Thr Ala Gln Val Cys Ala Gly Tyr Cys Ser Asn Asn Ser Thr	
4270 4275 4280	
TGC ACC GTC AAC CAG GGC AAC CAG CCC CAG TGC CGA TGT CTA CCT GGC	13335
Cys Thr Val Asn Gln Gly Asn Gln Pro Gln Cys Arg Cys Leu Pro Gly	
4285 4290 4295	
TTC CTG GGC GAC CGT TGC CAG TAC CGG CAG TGC TCT GGC TTC TGT GAG	13383
Phe Leu Gly Asp Arg Cys Gln Tyr Arg Gln Cys Ser Gly Phe Cys Glu	
4300 4305 4310	
AAC TTT GGC ACC TGT CAG ATG GCT GCT GAT GGC TCC CGA CAA TGT CGC	13431
Asn Phe Gly Thr Cys Gln Met Ala Ala Asp Gly Ser Arg Gln Cys Arg	
4315 4320 4325 4330	
TGC ACC GTC TAC TTT GAG GGA CCA AGG TGT GAG GTG AAC AAG TGT AGT	13479
Cys Thr Val Tyr Phe Glu Gly Pro Arg Cys Glu Val Asn Lys Cys Ser	
4335 4340 4345	
CGC TGT CTC CAA GGC GCC TGT GTG GTC AAT AAG CAG ACC GGA GAT GTC	13527
Arg Cys Leu Gln Gly Ala Cys Val Val Asn Lys Gln Thr Gly Asp Val	
4350 4355 4360	

## 36/65

ACA TGC AAC TGC ACT GAT GGC CGG GTA GCC CCC AGT TGT CTC ACC TGC			13575
Thr Cys Asn Cys Thr Asp Gly Arg Val Ala Pro Ser Cys Leu Thr Cys			
4365	4370	4375	
ATC GAT CAC TGT AGC AAT GGT GGC TCC TGC ACC ATG AAC AGC AAG ATG			13623
Ile Asp His Cys Ser Asn Gly Gly Ser Cys Thr Met Asn Ser Lys Met			
4380	4385	4390	
ATG CCT GAG TGC CAG TGC CCG CCC CAT ATG ACA GGA CCC CGG TGC CAG			13671
Met Pro Glu Cys Gln Cys Pro Pro His Met Thr Gly Pro Arg Cys Gln			
4395	4400	4405	4410
GAG CAG GTT GTT AGT CAG CAA CAG CCT GGG CAT ATG GCC TCC ATC CTG			13719
Glu Gln Val Val Ser Gln Gln Gln Pro Gly His Met Ala Ser Ile Leu			
4415	4420	4425	
ATC CCT CTG CTG CTG CTT CTC CTG CTG CTT CTG GTG GCT GGC GTG GTG			13767
Ile Pro Leu Leu Leu Leu Leu Leu Leu Val Ala Gly Val Val Val			
4430	4435	4440	
TTC TGG TAT AAG CGG CGA GTC CGA GGG GCT AAG GGC TTC CAG CAC CAG			13815
Phe Trp Tyr Lys Arg Arg Val Arg Gly Ala Lys Gly Phe Gln His Gln			
4445	4450	4455	
CGG ATG ACC AAT GGG GCC ATG AAT GTG GAA ATT GGA AAC CCT ACC TAC			13863
Arg Met Thr Asn Gly Ala Met Asn Val Glu Ile Gly Asn Pro Thr Tyr			
4460	4465	4470	
AAG ATG TAT GAA GGT GGA GAG CCC GAT GAT GTC GGG GGC CTA CTG GAT			13911
Lys Met Tyr Glu Gly Gly Glu Pro Asp Asp Val Gly Gly Leu Leu Asp			
4475	4480	4485	4490
GCT GAT TTT GCC CTT GAC CCT GAC AAG CCT ACC AAC TTC ACC AAC CCA			13959
Ala Asp Phe Ala Leu Asp Pro Asp Lys Pro Thr Asn Phe Thr Asn Pro			
4495	4500	4505	
GTG TAT GCC ACG CTC TAC ATG GGG GGC CAC GGC AGC CGC CAT TCC CTG			14007
Val Tyr Ala Thr Leu Tyr Met Gly Gly His Gly Ser Arg His Ser Leu			
4510	4515	4520	
GCC AGC ACG GAC GAG AAG CGA GAA CTG CTG GGC CGG GGA CCT GAA GAC			14055
Ala Ser Thr Asp Glu Lys Arg Glu Leu Leu Gly Arg Gly Pro Glu Asp			
4525	4530	4535	

FIG.6A-26

37/65

GAG ATA GGA GAT CCC TTG GCA TAGGGCCCTG CCCCCACGGA TGTCCCCAGA AAGC 14110  
CCCCTGCCAC ATGAGTCTTT CAATGAACCC CCTCCCCAGC CGGCCCTTCT CGGCCCTGC 14170  
Glu Ile Gly Asp Pro Leu Ala  
4540 4545

CGGGTGTACA AATGTAAAAA TGAAGGAATT ACTTTTATA TGTGAGCGAG CAAGCGAGCA 14230

AGCACAGTAT TATCTCTTG CATTTCCTTC CTGCCTGCTC CTCAGTATCC CCCCCATGCT 14290  
GCCTTGAGGG GGCGGGGAGG GCTTTGTGGC TCAAAGGTAT GAAGGAGTCC ACATGTTCCC 14350  
TACCGAGCAT ACCCCTGGAA GCCTGGCGGC ACGGCCTCCC CACCACGCCT GTGCAAGACA 14410  
CTCAACGGGG CTCCGTGTCC CAGCTTCCT TTCCCTGGCT CTCTGGGGTT AGTTCAGGGG 14470  
AGGTGGAGTC CTCTGCTGAC CCTGTCTGGA AGATTGGCT CTAGCTGAGG AAGGAGTCTT 14530  
TTAGTTGAGG GAAGTCACCC CAAACCCCAG CTCCCACTTT CAGGGGCACC TCTCAGATGG 14590  
CCATGCTCAG TATCCCTTCC AGACAGGCC C TCCCTCTCT AGCGCCCCCT CTGTGGCTCC 14650  
TAGGGCTGAA CACATTCTTT GGTAACTGTC CCCAAGCCT CCCATCCCCC TGAGGGCCAG 14710  
GAAGAGTCGG GGCACACCAA GGAAGGGCAA GCGGGCAGCC CCATTTGGG GACGTGAACG 14770  
TTTTAATAAT TTTTGCTGAA TTCCTTACA ACTAAATAAC ACAGATATTG TTATAAATAA 14830  
AATTGTAAAA AAAAAAAA

FIG.6A-27

Met Leu Thr Pro Pro Leu Leu Leu Val Pro Leu Leu Ser Ala Leu  
 1 5 10 15  
 Val Ser Gly Ala Thr Met Asp Ala Pro Lys Thr Cys Ser Pro Lys Gln  
 20 25 30  
 Phe Ala Cys Arg Asp Gln Ile Thr Cys Ile Ser Lys Gly Trp Arg Cys  
 35 40 45  
 Asp Gly Glu Arg Asp Cys Pro Asp Gly Ser Asp Glu Ala Pro Glu Ile  
 50 55 60  
 Cys Pro Gln Ser Lys Ala Gln Arg Cys Pro Pro Asn Glu His Ser Cys  
 65 70 75 80  
 Leu Gly Thr Glu Leu Cys Val Pro Met Ser Arg Leu Cys Asn Gly Ile  
 85 90 95  
 Gln Asp Cys Met Asp Gly Ser Asp Glu Gly Ala His Cys Arg Glu Leu  
 100 105 110  
 Arg Ala Asn Cys Ser Arg Met Gly Cys Gln His His Cys Val Pro Thr  
 115 120 125  
 Pro Ser Gly Pro Thr Cys Tyr Cys Asn Ser Ser Phe Gln Leu Glu Ala  
 130 135 140  
 Asp Gly Lys Thr Cys Lys Asp Phe Asp Glu Cys Ser Val Tyr Gly Thr  
 145 150 155 160  
 Cys Ser Gln Leu Cys Thr Asn Thr Asp Gly Ser Phe Thr Cys Gly Cys  
 165 170 175  
 Val Glu Gly Tyr Leu Leu Gln Pro Asp Asn Arg Ser Cys Lys Ala Lys  
 180 185 190  
 Asn Glu Pro Val Asp Arg Pro Pro Val Leu Leu Ile Ala Asn Ser Gln  
 195 200 205  
 Asn Ile Leu Ala Thr Tyr Leu Ser Gly Ala Gln Val Ser Thr Ile Thr  
 210 215 220  
 Pro Thr Ser Thr Arg Gln Thr Thr Ala Met Asp Phe Ser Tyr Ala Asn  
 225 230 235 240  
 Glu Thr Val Cys Trp Val His Val Gly Asp Ser Ala Ala Gln Thr Gln  
 245 250 255  
 Leu Lys Cys Ala Arg Met Pro Gly Leu Lys Gly Phe Val Asp Glu His  
 260 265 270  
 Thr Ile Asn Ile Ser Leu Ser Leu His His Val Glu Gln Met Ala Ile  
 275 280 285  
 Asp Trp Leu Thr Gly Asn Phe Tyr Phe Val Asp Asp Ile Asp Asp Arg  
 290 295 300  
 Ile Phe Val Cys Asn Arg Asn Gly Asp Thr Cys Val Thr Leu Leu Asp  
 305 310 315 320

39/65

FIG. 6B-2

## 40/65

Asp Pro Leu Asn Gly Trp Met Tyr Trp Thr Asp Trp Glu Glu Asp Pro  
                  660                 665                 670

Lys Asp Ser Arg Arg Gly Arg Leu Glu Arg Ala Trp Met Asp Gly Ser  
                  675                 680                 685

His Arg Asp Ile Phe Val Thr Ser Lys Thr Val Leu Trp Pro Asn Gly  
                  690                 695                 700

Leu Ser Leu Asp Ile Pro Ala Gly Arg Leu Tyr Trp Val Asp Ala Phe  
                  705                 710                 715                 720

Tyr Asp Arg Ile Glu Thr Ile Leu Leu Asn Gly Thr Asp Arg Lys Ile  
                  725                 730                 735

Val Tyr Glu Gly Pro Glu Leu Asn His Ala Phe Gly Leu Cys His His  
                  740                 745                 750

Gly Asn Tyr Leu Phe Trp Thr Glu Tyr Arg Ser Gly Ser Val Tyr Arg  
                  755                 760                 765

Leu Glu Arg Gly Val Ala Gly Ala Pro Pro Thr Val Thr Leu Leu Arg  
                  770                 775                 780

Ser Glu Arg Pro Pro Ile Phe Glu Ile Arg Met Tyr Asp Ala His Glu  
                  785                 790                 795                 800

Gln Gln Val Gly Thr Asn Lys Cys Arg Val Asn Asn Gly Gly Cys Ser  
                  805                 810                 815

Ser Leu Cys Leu Ala Thr Pro Gly Ser Arg Gln Cys Ala Cys Ala Glu  
                  820                 825                 830

Asp Gln Val Leu Asp Thr Asp Gly Val Thr Cys Leu Ala Asn Pro Ser  
                  835                 840                 845

Tyr Val Pro Pro Pro Gln Cys Gln Pro Gly Gln Phe Ala Cys Ala Asn  
                  850                 855                 860

Asn Arg Cys Ile Gln Glu Arg Trp Lys Cys Asp Gly Asp Asn Asp Cys  
                  865                 870                 875                 880

Leu Asp Asn Ser Asp Glu Ala Pro Ala Leu Cys His Gln His Thr Cys  
                  885                 890                 895

Pro Ser Asp Arg Phe Lys Cys Glu Asn Asn Arg Cys Ile Pro Asn Arg  
                  900                 905                 910

Trp Leu Cys Asp Gly Asp Asn Asp Cys Gly Asn Ser Glu Asp Glu Ser  
                  915                 920                 925

Asn Ala Thr Cys Ser Ala Arg Thr Cys Pro Pro Asn Gln Phe Ser Cys  
                  930                 935                 940

Ala Ser Gly Arg Cys Ile Pro Ile Ser Trp Thr Cys Asp Leu Asp Asp  
                  945                 950                 955                 960

Asp Cys Gly Asp Arg Ser Asp Glu Ser Ala Ser Cys Ala Tyr Pro Thr  
                  965                 970                 975

Cys Phe Pro Leu Thr Gln Phe Thr Cys Asn Asn Gly Arg Cys Ile Asn  
                  980                 985                 990

## 41/65

Ile Asn Trp Arg Cys Asp Asn Asp Asn Asp Cys Gly Asp Asn Ser Asp  
 995 1000 1005  
 Glu Ala Gly Cys Ser His Ser Cys Ser Ser Thr Gln Phe Lys Cys Asn  
 1010 1015 1020  
 Ser Gly Arg Cys Ile Pro Glu His Trp Thr Cys Asp Gly Asp Asn Asp  
 025 1030 1035 1040  
 Cys Gly Asp Tyr Ser Asp Glu Thr His Ala Asn Cys Thr Asn Gln Ala  
 1045 1050 1055  
 Thr Arg Pro Pro Gly Gly Cys His Ser Asp Glu Phe Gln Cys Pro Leu  
 1060 1065 1070  
 Asp Gly Leu Cys Ile Pro Leu Arg Trp Arg Cys Asp Gly Asp Thr Asp  
 1075 1080 1085  
 Cys Met Asp Ser Ser Asp Glu Lys Ser Cys Glu Gly Val Thr His Val  
 1090 1095 1100  
 Cys Asp Pro Asn Val Lys Phe Gly Cys Lys Asp Ser Ala Arg Cys Ile  
 105 1110 1115 1120  
 Ser Lys Ala Trp Val Cys Asp Gly Asp Ser Asp Cys Glu Asp Asn Ser  
 1125 1130 1135  
 Asp Glu Glu Asn Cys Glu Ala Leu Ala Cys Arg Pro Pro Ser His Pro  
 1140 1145 1150  
 Cys Ala Asn Asn Thr Ser Val Cys Leu Pro Pro Asp Lys Leu Cys Asp  
 1155 1160 1165  
 Gly Lys Asp Asp Cys Gly Asp Gly Ser Asp Glu Gly Glu Leu Cys Asp  
 1170 1175 1180  
 Gln Cys Ser Leu Asn Asn Gly Gly Cys Ser His Asn Cys Ser Val Ala  
 185 1190 1195 1200  
 Pro Gly Glu Gly Ile Val Cys Ser Cys Pro Leu Gly Met Glu Leu Gly  
 1205 1210 1215  
 Ser Asp Asn His Thr Cys Gln Ile Gln Ser Tyr Cys Ala Lys His Leu  
 1220 1225 1230  
 Lys Cys Ser Gln Lys Cys Asp Gln Asn Lys Phe Ser Val Lys Cys Ser  
 1235 1240 1245  
 Cys Tyr Glu Gly Trp Val Leu Glu Pro Asp Gly Glu Thr Cys Arg Ser  
 1250 1255 1260  
 Leu Asp Pro Phe Lys Leu Phe Ile Ile Phe Ser Asn Arg His Glu Ile  
 265 1270 1275 1280  
 Arg Arg Ile Asp Leu His Lys Gly Asp Tyr Ser Val Leu Val Pro Gly  
 1285 1290 1295  
 Leu Arg Asn Thr Ile Ala Leu Asp Phe His Leu Ser Gln Ser Ala Leu  
 1300 1305 1310  
 Tyr Trp Thr Asp Ala Val Glu Asp Lys Ile Tyr Arg Gly Lys Leu Leu  
 1315 1320 1325

## 42/65

Asp Asn Gly Ala Leu Thr Ser Phe Glu Val Val Ile Gln Tyr Gly Leu  
 1330 1335 1340  
 Ala Thr Pro Glu Gly Leu Ala Val Asp Trp Ile Ala Gly Asn Ile Tyr  
 345 1350 1355 1360  
 Trp Val Glu Ser Asn Leu Asp Gln Ile Glu Val Ala Lys Leu Asp Gly  
 1365 1370 1375  
 Thr Leu Arg Thr Thr Leu Leu Ala Gly Asp Ile Glu His Pro Arg Ala  
 1380 1385 1390  
 Ile Ala Leu Asp Pro Arg Asp Gly Ile Leu Phe Trp Thr Asp Trp Asp  
 1395 1400 1405  
 Ala Ser Leu Pro Arg Ile Glu Ala Ala Ser Met Ser Gly Ala Gly Arg  
 1410 1415 1420  
 Arg Thr Ile His Arg Glu Thr Gly Ser Gly Gly Cys Ala Asn Gly Leu  
 425 1430 1435 1440  
 Thr Val Asp Tyr Leu Glu Lys Arg Ile Leu Trp Ile Asp Ala Arg Ser  
 1445 1450 1455  
 Asp Ala Ile Tyr Ser Ala Arg Tyr Asp Gly Ser Gly His Met Glu Val  
 1460 1465 1470  
 Leu Arg Gly His Glu Phe Leu Ser His Pro Phe Ala Val Thr Leu Tyr  
 1475 1480 1485  
 Gly Gly Glu Val Tyr Trp Thr Asp Trp Arg Thr Asn Thr Leu Ala Lys  
 1490 1495 1500  
 Ala Asn Lys Trp Thr Gly His Asn Val Thr Val Val Gln Arg Thr Asn  
 505 1510 1515 1520  
 Thr Gln Pro Phe Asp Leu Gln Val Tyr His Pro Ser Arg Gln Pro Met  
 1525 1530 1535  
 Ala Pro Asn Pro Cys Glu Ala Asn Gly Gly Arg Gly Pro Cys Ser His  
 1540 1545 1550  
 Leu Cys Leu Ile Asn Tyr Asn Arg Thr Val Ser Trp Ala Cys Pro His  
 1555 1560 1565  
 Leu Met Lys Leu His Lys Asp Asn Thr Thr Cys Tyr Glu Phe Lys Lys  
 1570 1575 1580  
 Phe Leu Leu Tyr Ala Arg Gln Met Glu Ile Arg Gly Val Asp Leu Asp  
 585 1590 1595 1600  
 Ala Pro Tyr Tyr Asn Tyr Ile Ile Ser Phe Thr Val Pro Asp Ile Asp  
 1605 1610 1615  
 Asn Val Thr Val Leu Asp Tyr Asp Ala Arg Glu Gln Arg Val Tyr Trp  
 1620 1625 1630  
 Ser Asp Val Arg Thr Gln Ala Ile Lys Arg Ala Phe Ile Asn Gly Thr  
 1635 1640 1645  
 Gly Val Glu Thr Val Val Ser Ala Asp Leu Pro Asn Ala His Gly Leu  
 1650 1655 1660

43/65

Ala Val Asp Trp Val Ser Arg Asn Leu Phe Trp Thr Ser Tyr Asp Thr  
 665 1670 1675 1680  
 Asn Lys Lys Gln Ile Asn Val Ala Arg Leu Asp Gly Ser Phe Lys Asn  
 1685 1690 1695  
 Ala Val Val Gln Gly Leu Glu Gln Pro His Gly Leu Val Val His Pro  
 1700 1705 1710  
 Leu Arg Gly Lys Leu Tyr Trp Thr Asp Gly Asp Asn Ile Ser Met Ala  
 1715 1720 1725  
 Asn Met Asp Gly Ser Asn His Thr Leu Leu Phe Ser Gly Gln Lys Gly  
 1730 1735 1740  
 Pro Val Gly Leu Ala Ile Asp Phe Pro Glu Ser Lys Leu Tyr Trp Ile  
 745 1750 1755 1760  
 Ser Ser Gly Asn His Thr Ile Asn Arg Cys Asn Leu Asp Gly Ser Glu  
 1765 1770 1775  
 Leu Glu Val Ile Asp Thr Met Arg Ser Gln Leu Gly Lys Ala Thr Ala  
 1780 1785 1790  
 Leu Ala Ile Met Gly Asp Lys Leu Trp Trp Ala Asp Gln Val Ser Glu  
 1795 1800 1805  
 Lys Met Gly Thr Cys Asn Lys Ala Asp Gly Ser Gly Ser Val Val Leu  
 1810 1815 1820  
 Arg Asn Ser Thr Thr Leu Val Met His Met Lys Val Tyr Asp Glu Ser  
 825 1830 1835 1840  
 Ile Gln Leu Glu His Glu Gly Thr Asn Pro Cys Ser Val Asn Asn Gly  
 1845 1850 1855  
 Asp Cys Ser Gln Leu Cys Leu Pro Thr Ser Glu Thr Arg Ser Cys  
 1860 1865 1870  
 Met Cys Thr Ala Gly Tyr Ser Leu Arg Ser Gly Gln Gln Ala Cys Glu  
 1875 1880 1885  
 Gly Val Gly Ser Phe Leu Leu Tyr Ser Val His Glu Gly Ile Arg Gly  
 1890 1895 1900  
 Ile Pro Leu Asp Pro Asn Asp Lys Ser Asp Ala Leu Val Pro Val Ser  
 905 1910 1915 1920  
 Gly Thr Ser Leu Ala Val Gly Ile Asp Phe His Ala Glu Asn Asp Thr  
 1925 1930 1935  
 Ile Tyr Trp Val Asp Met Gly Leu Ser Thr Ile Ser Arg Ala Lys Arg  
 1940 1945 1950  
 Asp Gln Thr Trp Arg Glu Asp Val Val Thr Asn Gly Ile Gly Arg Val  
 1955 1960 1965  
 Glu Gly Ile Ala Val Asp Trp Ile Ala Gly Asn Ile Tyr Trp Thr Asp  
 1970 1975 1980  
 Gln Gly Phe Asp Val Ile Glu Val Ala Arg Leu Asn Gly Ser Phe Arg  
 985 1990 1995 2000

## 44/65

Tyr Val Val Ile Ser Gln Gly Leu Asp Lys Pro Arg Ala Ile Thr Val  
 2005 2010 2015  
 His Pro Glu Lys Gly Tyr Leu Phe Trp Thr Glu Trp Gly His Tyr Pro  
 2020 2025 2030  
 Arg Ile Glu Arg Ser Arg Leu Asp Gly Thr Glu Arg Val Val Leu Val  
 2035 2040 2045  
 Asn Val Ser Ile Ser Trp Pro Asn Gly Ile Ser Val Asp Tyr Gln Gly  
 2050 2055 2060  
 Gly Lys Leu Tyr Trp Cys Asp Ala Arg Met Asp Lys Ile Glu Arg Ile  
 065 2070 2075 2080  
 Asp Leu Glu Thr Gly Glu Asn Arg Glu Val Val Leu Ser Ser Asn Asn  
 2085 2090 2095  
 Met Asp Met Phe Ser Val Ser Val Phe Glu Asp Phe Ile Tyr Trp Ser  
 2100 2105 2110  
 Asp Arg Thr His Ala Asn Gly Ser Ile Lys Arg Gly Cys Lys Asp Asn  
 2115 2120 2125  
 Ala Thr Asp Ser Val Pro Leu Arg Thr Gly Ile Gly Val Gln Leu Lys  
 2130 2135 2140  
 Asp Ile Lys Val Phe Asn Arg Asp Arg Gln Lys Gly Thr Asn Val Cys  
 145 2150 2155 2160  
 Ala Val Ala Asn Gly Gly Cys Gln Gln Leu Cys Leu Tyr Arg Gly Gly  
 2165 2170 2175  
 Gly Gln Arg Ala Cys Ala Cys Ala His Gly Met Leu Ala Glu Asp Gly  
 2180 2185 2190  
 Ala Ser Cys Arg Glu Tyr Ala Gly Tyr Leu Leu Tyr Ser Glu Arg Thr  
 2195 2200 2205  
 Ile Leu Lys Ser Ile His Leu Ser Asp Glu Arg Asn Leu Asn Ala Pro  
 2210 2215 2220  
 Val Gln Pro Phe Glu Asp Pro Glu His Met Lys Asn Val Ile Ala Leu  
 225 2230 2235 2240  
 Ala Phe Asp Tyr Arg Ala Gly Thr Ser Pro Gly Thr Pro Asn Arg Ile  
 2245 2250 2255  
 Phe Phe Ser Asp Ile His Phe Gly Asn Ile Gln Gln Ile Asn Asp Asp  
 2260 2265 2270  
 Gly Ser Gly Arg Thr Thr Ile Val Glu Asn Val Gly Ser Val Glu Gly  
 2275 2280 2285  
 Leu Ala Tyr His Arg Gly Trp Asp Thr Leu Tyr Trp Thr Ser Tyr Thr  
 2290 2295 2300  
 Thr Ser Thr Ile Thr Arg His Thr Val Asp Gln Thr Arg Pro Gly Ala  
 305 2310 2315 2320  
 Phe Glu Arg Glu Thr Val Ile Thr Met Ser Gly Asp Asp His Pro Arg  
 2325 2330 2335

## 45/65

Ala Phe Val Leu Asp Glu Cys Gln Asn Leu Met Phe Trp Thr Asn Trp  
                  2340                 2345                 2350  
 Asn Glu Leu His Pro Ser Ile Met Arg Ala Ala Leu Ser Gly Ala Asn  
                  2355                 2360                 2365  
 Val Leu Thr Leu Ile Glu Lys Asp Ile Arg Thr Pro Asn Gly Leu Ala  
                  2370                 2375                 2380  
 Ile Asp His Arg Ala Glu Lys Leu Tyr Phe Ser Asp Ala Thr Leu Asp  
                  385                 2390                 2395                 2400  
 Lys Ile Glu Arg Cys Glu Tyr Asp Gly Ser His Arg Tyr Val Ile Leu  
                  2405                 2410                 2415  
 Lys Ser Glu Pro Val His Pro Phe Gly Leu Ala Val Tyr Gly Glu His  
                  2420                 2425                 2430  
 Ile Phe Trp Thr Asp Trp Val Arg Arg Ala Val Gln Arg Ala Asn Lys  
                  2435                 2440                 2445  
 Tyr Val Gly Ser Asp Met Lys Leu Leu Arg Val Asp Ile Pro Gln Gln  
                  2450                 2455                 2460  
 Pro Met Gly Ile Ile Ala Val Ala Asn Asp Thr Asn Ser Cys Glu Leu  
                  465                 2470                 2475                 2480  
 Ser Pro Cys Arg Ile Asn Asn Gly Gly Cys Gln Asp Leu Cys Leu Leu  
                  2485                 2490                 2495  
 Thr His Gln Gly His Val Asn Cys Ser Cys Arg Gly Gly Arg Ile Leu  
                  2500                 2505                 2510  
 Gln Glu Asp Phe Thr Cys Arg Ala Val Asn Ser Ser Cys Arg Ala Gln  
                  2515                 2520                 2525  
 Asp Glu Phe Glu Cys Ala Asn Gly Glu Cys Ile Ser Phe Ser Leu Thr  
                  2530                 2535                 2540  
 Cys Asp Gly Val Ser His Cys Lys Asp Lys Ser Asp Glu Lys Pro Ser  
                  545                 2550                 2555                 2560  
 Tyr Cys Asn Ser Arg Arg Cys Lys Lys Thr Phe Arg Gln Cys Asn Asn  
                  2565                 2570                 2575  
 Gly Arg Cys Val Ser Asn Met Leu Trp Cys Asn Gly Val Asp Tyr Cys  
                  2580                 2585                 2590  
 Gly Asp Gly Ser Asp Glu Ile Pro Cys Asn Lys Thr Ala Cys Gly Val  
                  2595                 2600                 2605  
 Gly Glu Phe Arg Cys Arg Asp Gly Ser Cys Ile Gly Asn Ser Ser Arg  
                  2610                 2615                 2620  
 Cys Asn Gln Phe Val Asp Cys Glu Asp Ala Ser Asp Glu Met Asn Cys  
                  625                 2630                 2635                 2640  
 Ser Ala Thr Asp Cys Ser Ser Tyr Phe Arg Leu Gly Val Lys Gly Val  
                  2645                 2650                 2655  
 Leu Phe Gln Pro Cys Glu Arg Thr Ser Leu Cys Tyr Ala Pro Ser Trp  
                  2660                 2665                 2670

## 46/65

Val Cys Asp Gly Ala Asn Asp Cys Gly Asp Tyr Ser Asp Glu Arg Asp  
 2675 2680 2685  
 Cys Pro Gly Val Lys Arg Pro Arg Cys Pro Leu Asn Tyr Phe Ala Cys  
 2690 2695 2700  
 Pro Ser Gly Arg Cys Ile Pro Met Ser Trp Thr Cys Asp Lys Glu Asp  
 705 2710 2715 2720  
 Asp Cys Glu Asn Gly Glu Asp Glu Thr His Cys Asn Lys Phe Cys Ser  
 2725 2730 2735  
 Glu Ala Gln Phe Glu Cys Gln Asn His Arg Cys Ile Ser Lys Gln Trp  
 2740 2745 2750  
 Leu Cys Asp Gly Ser Asp Asp Cys Gly Asp Gly Ser Asp Glu Ala Ala  
 2755 2760 2765  
 His Cys Glu Gly Lys Thr Cys Gly Pro Ser Ser Phe Ser Cys Pro Gly  
 2770 2775 2780  
 Thr His Val Cys Val Pro Glu Arg Trp Leu Cys Asp Gly Asp Lys Asp  
 785 2790 2795 2800  
 Cys Thr Asp Gly Ala Asp Glu Ser Val Thr Ala Gly Cys Leu Tyr Asn  
 2805 2810 2815  
 Ser Thr Cys Asp Asp Arg Glu Phe Met Cys Gln Asn Arg Leu Cys Ile  
 2820 2825 2830  
 Pro Lys His Phe Val Cys Asp His Asp Arg Asp Cys Ala Asp Gly Ser  
 2835 2840 2845  
 Asp Glu Ser Pro Glu Cys Glu Tyr Pro Thr Cys Gly Pro Asn Glu Phe  
 2850 2855 2860  
 Arg Cys Ala Asn Gly Arg Cys Leu Ser Ser Arg Gln Trp Glu Cys Asp  
 865 2870 2875 2880  
 Gly Glu Asn Asp Cys His Asp His Ser Asp Glu Ala Pro Lys Asn Pro  
 2885 2890 2895  
 His Cys Thr Ser Pro Glu His Lys Cys Asn Ala Ser Ser Gln Phe Leu  
 2900 2905 2910  
 Cys Ser Ser Gly Arg Cys Val Ala Glu Ala Leu Leu Cys Asn Gly Gln  
 2915 2920 2925  
 Asp Asp Cys Gly Asp Gly Ser Asp Glu Arg Gly Cys His Val Asn Glu  
 2930 2935 2940  
 Cys Leu Ser Arg Lys Leu Ser Gly Cys Ser Gln Asp Cys Glu Asp Leu  
 945 2950 2955 2960  
 Lys Ile Gly Phe Lys Cys Arg Cys Arg Pro Gly Phe Arg Leu Lys Asp  
 2965 2970 2975  
 Asp Gly Arg Thr Cys Ala Asp Leu Asp Glu Cys Ser Thr Thr Phe Pro  
 2980 2985 2990  
 Cys Ser Gln Leu Cys Ile Asn Thr His Gly Ser Tyr Lys Cys Leu Cys  
 2995 3000 3005

## 47/65

Val Glu Gly Tyr Ala Pro Arg Gly Gly Asp Pro His Ser Cys Lys Ala  
 3010 3015 3020  
 Val Thr Asp Glu Glu Pro Phe Leu Ile Phe Ala Asn Arg Tyr Tyr Leu  
 025 3030 3035 3040  
 Arg Lys Leu Asn Leu Asp Gly Ser Asn Tyr Thr Leu Leu Lys Gln Gly  
 3045 3050 3055  
 Leu Asn Asn Ala Val Ala Leu Ala Phe Asp Tyr Arg Glu Gln Met Ile  
 3060 3065 3070  
 Tyr Trp Thr Gly Val Thr Thr Gln Gly Ser Met Ile Arg Arg Met His  
 3075 3080 3085  
 Leu Asn Gly Ser Asn Val Gln Val Leu His Arg Thr Gly Leu Ser Asn  
 3090 3095 3100  
 Pro Asp Gly Leu Ala Val Asp Trp Val Gly Gly Asn Leu Tyr Trp Cys  
 105 3110 3115 3120  
 Asp Lys Gly Arg Asp Thr Ile Glu Val Ser Lys Leu Asn Gly Ala Tyr  
 3125 3130 3135  
 Arg Thr Val Leu Val Ser Ser Gly Leu Arg Glu Pro Arg Ala Leu Val  
 3140 3145 3150  
 Val Asp Val Gln Asn Gly Tyr Leu Tyr Trp Thr Asp Trp Gly Asp His  
 3155 3160 3165  
 Ser Leu Ile Gly Arg Ile Gly Met Asp Gly Ser Gly Arg Ser Ile Ile  
 3170 3175 3180  
 Val Asp Thr Lys Ile Thr Trp Pro Asn Gly Leu Thr Val Asp Tyr Val  
 185 3190 3195 3200  
 Thr Glu Arg Ile Tyr Trp Ala Asp Ala Arg Glu Asp Tyr Ile Glu Phe  
 3205 3210 3215  
 Ala Ser Leu Asp Gly Ser Asn Arg His Val Val Leu Ser Gln Asp Ile  
 3220 3225 3230  
 Pro His Ile Phe Ala Leu Thr Leu Phe Glu Asp Tyr Val Tyr Trp Thr  
 3235 3240 3245  
 Asp Trp Glu Thr Lys Ser Ile Asn Arg Ala His Lys Thr Thr Gly Ala  
 3250 3255 3260  
 Asn Lys Thr Leu Leu Ile Ser Thr Leu His Arg Pro Met Asp Leu His  
 265 3270 3275 3280  
 Val Phe His Ala Leu Arg Gln Pro Asp Val Pro Asn His Pro Cys Lys  
 3285 3290 3295  
 Val Asn Asn Gly Gly Cys Ser Asn Leu Cys Leu Leu Ser Pro Gly Gly  
 3300 3305 3310  
 Gly His Lys Cys Ala Cys Pro Thr Asn Phe Tyr Leu Gly Gly Asp Gly  
 3315 3320 3325  
 Arg Thr Cys Val Ser Asn Cys Thr Ala Ser Gln Phe Val Cys Lys Asn  
 3330 3335 3340

48/65

Asp Lys Cys Ile Pro Phe Trp Trp Lys Cys Asp Thr Glu Asp Asp Cys  
345 3350 3355 3360  
Gly Asp His Ser Asp Glu Pro Pro Asp Cys Pro Glu Phe Lys Cys Arg  
3365 3370 3375  
Pro Gly Gln Phe Gln Cys Ser Thr Gly Ile Cys Thr Asn Pro Ala Phe  
3380 3385 3390  
Ile Cys Asp Gly Asp Asn Asp Cys Gln Asp Asn Ser Asp Glu Ala Asn  
3395 3400 3405  
Cys Asp Ile His Val Cys Leu Pro Ser Gln Phe Lys Cys Thr Asn Thr  
3410 3415 3420  
Asn Arg Cys Ile Pro Gly Ile Phe Arg Cys Asn Gly Gln Asp Asn Cys  
425 3430 3435 3440  
Gly Asp Gly Glu Asp Glu Arg Asp Cys Pro Glu Val Thr Cys Ala Pro  
3445 3450 3455  
Asn Gln Phe Gln Cys Ser Ile Thr Lys Arg Cys Ile Pro Arg Val Trp  
3460 3465 3470  
Val Cys Asp Arg Asp Asn His Cys Val Asp Gly Ser Asp Glu Pro Ala  
3475 3480 3485  
Asn Cys Thr Gln Met Thr Cys Gly Val Asp Glu Phe Arg Cys Lys Asp  
3490 3495 3500  
Ser Gly Arg Cys Ile Pro Ala Arg Trp Lys Cys Asp Gly Glu Asp Asp  
505 3510 3515 3520  
Cys Gly Asp Gly Ser Asp Glu Pro Lys Glu Glu Cys Asp Glu Arg Thr  
3525 3530 3535  
Cys Glu Pro Tyr Gln Phe Arg Cys Lys Asn Asn Arg Cys Val Pro Gly  
3540 3545 3550  
Arg Trp Gln Cys Asp Tyr Asp Asn Asp Cys Gly Asp Asn Ser Asp Glu  
3555 3560 3565  
Glu Ser Cys Thr Pro Arg Pro Cys Ser Glu Ser Glu Phe Phe Cys Ala  
3570 3575 3580  
Asn Gly Arg Cys Ile Ala Gly Arg Trp Lys Cys Asp Gly Asp His Asp  
585 3590 3595 3600  
Cys Ala Asp Gly Ser Asp Glu Lys Asp Cys Thr Pro Arg Cys Asp Met  
3605 3610 3615  
Asp Gln Phe Gln Cys Lys Ser Gly His Cys Ile Pro Leu Arg Trp Pro  
3620 3625 3630  
Cys Asp Ala Asp Ala Asp Cys Met Asp Gly Ser Asp Glu Glu Ala Cys  
3635 3640 3645  
Gly Thr Gly Val Arg Thr Cys Pro Leu Asp Glu Phe Gln Cys Asn Asn  
3650 3655 3660  
Thr Leu Cys Lys Pro Leu Ala Trp Lys Cys Asp Gly Glu Asp Asp Cys  
665 3670 3675 3680

FIG.6B-11

49/65

Gly Asp Asn Ser Asp Glu Asn Pro Glu Glu Cys Ala Arg Phe Ile Cys  
3685 3690 3695  
Pro Pro Asn Arg Pro Phe Arg Cys Lys Asn Asp Arg Val Cys Leu Trp  
3700 3705 3710  
Ile Gly Arg Gln Cys Asp Gly Val Asp Asn Cys Gly Asp Gly Thr Asp  
3715 3720 3725  
Glu Glu Asp Cys Glu Pro Pro Thr Ala Gln Asn Pro His Cys Lys Asp  
3730 3735 3740  
Lys Lys Glu Phe Leu Cys Arg Asn Gln Arg Cys Leu Ser Ser Ser Leu  
745 3750 3755 3760  
Arg Cys Asn Met Phe Asp Asp Cys Gly Asp Gly Ser Asp Glu Glu Asp  
3765 3770 3775  
Cys Ser Ile Asp Pro Lys Leu Thr Ser Cys Ala Thr Asn Ala Ser Met  
3780 3785 3790  
Cys Gly Asp Glu Ala Arg Cys Val Arg Thr Glu Lys Ala Ala Tyr Cys  
3795 3800 3805  
Ala Cys Arg Ser Gly Phe His Thr Val Pro Gly Gln Pro Gly Cys Gln  
3810 3815 3820  
Asp Ile Asn Glu Cys Leu Arg Phe Gly Thr Cys Ser Gln Leu Trp Asn  
825 3830 3835 3840  
Lys Pro Lys Gly Gly His Leu Cys Ser Cys Ala Arg Asn Phe Met Lys  
3845 3850 3855  
Thr His Asn Thr Cys Lys Ala Glu Gly Ser Glu Tyr Gln Val Leu Tyr  
3860 3865 3870  
Ile Ala Asp Asp Asn Glu Ile Arg Ser Leu Phe Pro Gly His Pro His  
3875 3880 3885  
Ser Ala Tyr Glu Gln Thr Phe Gln Gly Asp Glu Ser Val Arg Ile Asp  
3890 3895 3900  
Ala Met Asp Val His Val Lys Ala Gly Arg Val Tyr Trp Thr Asn Trp  
905 3910 3915 3920  
His Thr Gly Thr Ile Ser Tyr Arg Ser Leu Pro Pro Ala Ala Pro Pro  
3925 3930 3935  
Thr Thr Ser Asn Arg His Arg Arg Gln Ile Asp Arg Gly Val Thr His  
3940 3945 3950  
Leu Asn Ile Ser Gly Leu Lys Met Pro Arg Gly Ile Ala Ile Asp Trp  
3955 3960 3965  
Val Ala Gly Asn Val Tyr Trp Thr Asp Ser Gly Arg Asp Val Ile Glu  
3970 3975 3980  
Val Ala Gln Met Lys Gly Glu Asn Arg Lys Thr Leu Ile Ser Gly Met  
985 3990 3995 4000  
Ile Asp Glu Pro His Ala Ile Val Val Asp Pro Leu Arg Gly Thr Met  
4005 4010 4015

FIG.6B-12

50/65

Tyr Trp Ser Asp Trp Gly Asn His Pro Lys Ile Glu Thr Ala Ala Met  
4020 4025 4030  
Asp Gly Thr Leu Arg Glu Thr Leu Val Gln Asp Asn Ile Gln Trp Pro  
4035 4040 4045  
Thr Gly Leu Ala Val Asp Tyr His Asn Glu Arg Leu Tyr Trp Ala Asp  
4050 4055 4060  
Ala Lys Leu Ser Val Ile Gly Ser Ile Arg Leu Asn Gly Thr Asp Pro  
065 4070 4075 4080  
Ile Val Ala Ala Asp Ser Lys Arg Gly Leu Ser His Pro Phe Ser Ile  
4085 4090 4095  
Asp Val Phe Glu Asp Tyr Ile Tyr Gly Val Thr Tyr Ile Asn Asn Arg  
4100 4105 4110  
Val Phe Lys Ile His Lys Phe Gly His Ser Pro Leu Tyr Asn Leu Thr  
4115 4120 4125  
Gly Gly Leu Ser His Ala Ser Asp Val Val Leu Tyr His Gln His Lys  
4130 4135 4140  
Gln Pro Glu Val Thr Asn Pro Cys Asp Arg Lys Lys Cys Glu Trp Leu  
145 4150 4155 4160  
Cys Leu Leu Ser Pro Ser Gly Pro Val Cys Thr Cys Pro Asn Gly Lys  
4165 4170 4175  
Arg Leu Asp Asn Gly Thr Cys Val Pro Val Pro Ser Pro Thr Pro Pro  
4180 4185 4190  
Pro Asp Ala Pro Arg Pro Gly Thr Cys Thr Leu Gln Cys Phe Asn Gly  
4195 4200 4205  
Gly Ser Cys Phe Leu Asn Ala Arg Arg Gln Pro Lys Cys Arg Cys Gln  
4210 4215 4220  
Pro Arg Tyr Thr Gly Asp Lys Cys Glu Leu Asp Gln Cys Trp Glu Tyr  
225 4230 4235 4240  
Cys His Asn Gly Gly Thr Cys Ala Ala Ser Pro Ser Gly Met Pro Thr  
4245 4250 4255  
Cys Arg Cys Pro Thr Gly Phe Thr Gly Pro Lys Cys Thr Ala Gln Val  
4260 4265 4270  
Cys Ala Gly Tyr Cys Ser Asn Asn Ser Thr Cys Thr Val Asn Gln Gly  
4275 4280 4285  
Asn Gln Pro Gln Cys Arg Cys Leu Pro Gly Phe Leu Gly Asp Arg Cys  
4290 4295 4300  
Gln Tyr Arg Gln Cys Ser Gly Phe Cys Glu Asn Phe Gly Thr Cys Gln  
305 4310 4315 4320  
Met Ala Ala Asp Gly Ser Arg Gln Cys Arg Cys Thr Val Tyr Phe Glu  
4325 4330 4335  
Gly Pro Arg Cys Glu Val Asn Lys Cys Ser Arg Cys Leu Gln Gly Ala  
4340 4345 4350

FIG.6B-13

51/65

Cys Val Val Asn Lys Gln Thr Gly Asp Val Thr Cys Asn Cys Thr Asp  
4355 4360 4365  
Gly Arg Val Ala Pro Ser Cys Leu Thr Cys Ile Asp His Cys Ser Asn  
4370 4375 4380  
Gly Gly Ser Cys Thr Met Asn Ser Lys Met Met Pro Glu Cys Gln Cys  
385 4390 4395 4400  
Pro Pro His Met Thr Gly Pro Arg Cys Gln Glu Gln Val Val Ser Gln  
4405 4410 4415  
Gln Gln Pro Gly His Met Ala Ser Ile Leu Ile Pro Leu Leu Leu  
4420 4425 4430  
Leu Leu Leu Leu Val Ala Gly Val Val Phe Trp Tyr Lys Arg Arg  
4435 4440 4445  
Val Arg Gly Ala Lys Gly Phe Gln His Gln Arg Met Thr Asn Gly Ala  
4450 4455 4460  
Met Asn Val Glu Ile Gly Asn Pro Thr Tyr Lys Met Tyr Glu Gly Gly  
465 4470 4475 4480  
Glu Pro Asp Asp Val Gly Gly Leu Leu Asp Ala Asp Phe Ala Leu Asp  
4485 4490 4495  
Pro Asp Lys Pro Thr Asn Phe Thr Asn Pro Val Tyr Ala Thr Leu Tyr  
4500 4505 4510  
Met Gly Gly His Gly Ser Arg His Ser Leu Ala Ser Thr Asp Glu Lys  
4515 4520 4525  
Arg Glu Leu Leu Gly Arg Gly Pro Glu Asp Glu Ile Gly Asp Pro Leu  
4530 4535 4540  
Ala  
545

FIG.6B-14

52/65

GCTACAATCC ATCTGGTCTC CTCCAGCTCC TTCTTCTGC AAC ATG GGG AAG AAC	55
Met Gly Lys Asn	
1	
AAA CTC CTT CAT CCA AGT CTG GTT CTT CTC CTC TTG GTC CTC CTG CCC	103
Lys Leu Leu His Pro Ser Leu Val Leu Leu Leu Leu Val Leu Leu Pro	
5 10 15 20	
ACA GAC GCC TCA GTC TCT GGA AAA CCG CAG TAT ATG GTT CTG GTC CCC	151
Thr Asp Ala Ser Val Ser Gly Lys Pro Gln Tyr Met Val Leu Val Pro	
25 30 35	
TCC CTG CTC CAC ACT GAG ACC ACT GAG AAG GGC TGT GTC CTT CTG AGC	199
Ser Leu Leu His Thr Glu Thr Glu Lys Gly Cys Val Leu Leu Ser	
40 45 50	
TAC CTG AAT GAG ACA GTG ACT GTA AGT GCT TCC TTG GAG TCT GTC AGG	247
Tyr Leu Asn Glu Thr Val Thr Val Ser Ala Ser Leu Glu Ser Val Arg	
55 60 65	
GGA AAC AGG AGC CTC TTC ACT GAC CTG GAG GCG GAG AAT GAC GTA CTC	295
Gly Asn Arg Ser Leu Phe Thr Asp Leu Glu Ala Glu Asn Asp Val Leu	
70 75 80	
CAC TGT GTC GCC TTC GCT GTC CCA AAG TCT TCA TCC AAT GAG GAG GTA	343
His Cys Val Ala Phe Ala Val Pro Lys Ser Ser Asn Glu Glu Val	
85 90 95 100	
ATG TTC CTC ACT GTC CAA GTG AAA GGA CCA ACC CAA GAA TTT AAG AAG	391
Met Phe Leu Thr Val Gln Val Lys Gly Pro Thr Gln Glu Phe Lys Lys	
105 110 115	
CGG ACC ACA GTG ATG GTT AAG AAC GAG GAC AGT CTG GTC TTT GTC CAG	439
Arg Thr Thr Val Met Val Lys Asn Glu Asp Ser Leu Val Phe Val Gln	
120 125 130	
ACA GAC AAA TCA ATC TAC AAA CCA GGG CAG ACA GTG AAA TTT CGT GTT	487
Thr Asp Lys Ser Ile Tyr Lys Pro Gly Gln Thr Val Lys Phe Arg Val	
135 140 145	
GTC TCC ATG GAT GAA AAC TTT CAC CCC CTG AAT GAG TTG ATT CCA CTA	535
Val Ser Met Asp Glu Asn Phe His Pro Leu Asn Glu Leu Ile Pro Leu	
150 155 160	

FIG.7A-1

53/65

GTA TAC ATT CAG GAT CCC AAA GGA AAT CGC ATC GCA CAA TGG CAG AGT	583
Val Tyr Ile Gln Asp Pro Lys Gly Asn Arg Ile Ala Gln Trp Gln Ser	
165 170 175 180	
TTC CAG TTA GAG GGT GGC CTC AAG CAA TTT TCT TTT CCC CTC TCA TCA	631
Phe Gln Leu Glu Gly Leu Lys Gln Phe Ser Phe Pro Leu Ser Ser	
185 190 195	
GAG CCC TTC CAG GGC TCC TAC AAG GTG GTG GTA CAG AAG AAA TCA GGT	679
Glu Pro Phe Gln Gly Ser Tyr Lys Val Val Val Gln Lys Lys Ser Gly	
200 205 210	
GGA AGG ACA GAG CAC CCT TTC ACC GTG GAG GAA TTT GTT CTT CCC AAG	727
Gly Arg Thr Glu His Pro Phe Thr Val Glu Glu Phe Val Leu Pro Lys	
215 220 225	
TTT GAA GTA CAA GTA ACA GTG CCA AAG ATA ATC ACC ATC TTG GAA GAA	775
Phe Glu Val Gln Val Thr Val Pro Lys Ile Ile Thr Ile Leu Glu Glu	
230 235 240	
GAG ATG AAT GTA TCA GTG TGT GGC CTA TAC ACA TAT GGG AAG CCT GTC	823
Glu Met Asn Val Ser Val Cys Gly Leu Tyr Thr Tyr Gly Lys Pro Val	
245 250 255 260	
CCT GGA CAT GTG ACT GTG AGC ATT TGC AGA AAG TAT AGT GAC GCT TCC	871
Pro Gly His Val Thr Val Ser Ile Cys Arg Lys Tyr Ser Asp Ala Ser	
265 270 275	
GAC TGC CAC GGT GAA GAT TCA CAG GCT TTC TGT GAG AAA TTC AGT GGA	919
Asp Cys His Gly Glu Asp Ser Gln Ala Phe Cys Glu Lys Phe Ser Gly	
280 285 290	
CAG CTA AAC AGC CAT GGC TGC TTC TAT CAG CAA GTA AAA ACC AAG GTC	967
Gln Leu Asn Ser His Gly Cys Phe Tyr Gln Gln Val Lys Thr Lys Val	
295 300 305	
TTC CAG CTG AAG AGG AAG GAG TAT GAA ATG AAA CTT CAC ACT GAG GCC	1015
Phe Gln Leu Lys Arg Lys Glu Tyr Glu Met Lys Leu His Thr Glu Ala	
310 315 320	
CAG ATC CAA GAA GAA GGA ACA GTG GTG GAA TTG ACT GGA AGG CAG TCC	1063
Gln Ile Gln Glu Glu Gly Thr Val Val Glu Leu Thr Gly Arg Gln Ser	
325 330 335 340	

FIG.7A-2

54/65

AGT GAA ATC ACA AGA ACC ATA ACC AAA CTC TCA TTT GTG AAA GTG GAC			1111
Ser Glu Ile Thr Arg Thr Ile Thr Lys Leu Ser Phe Val Lys Val Asp			
345	350	355	
TCA CAC TTT CGA CAG GGA ATT CCC TTC TTT GGG CAG GTG CGC CTA GTA			1159
Ser His Phe Arg Gln Gly Ile Pro Phe Phe Gly Gln Val Arg Leu Val			
360	365	370	
GAT GGG AAA GGC GTC CCT ATA CCA AAT AAA GTC ATA TTC ATC AGA GGA			1207
Asp Gly Lys Gly Val Pro Ile Pro Asn Lys Val Ile Phe Ile Arg Gly			
375	380	385	
AAT GAA GCA AAC TAT TAC TCC AAT GCT ACC ACG GAT GAG CAT GGC CTT			1255
Asn Glu Ala Asn Tyr Tyr Ser Asn Ala Thr Thr Asp Glu His Gly Leu			
390	395	400	
GTA CAG TTC TCT ATC AAC ACC ACC AAC GTT ATG GGT ACC TCT CTT ACT			1303
Val Gln Phe Ser Ile Asn Thr Thr Asn Val Met Gly Thr Ser Leu Thr			
405	410	415	420
GTT AGG GTC AAT TAC AAG GAT CGT AGT CCC TGT TAC GGC TAC CAG TGG			1351
Val Arg Val Asn Tyr Lys Asp Arg Ser Pro Cys Tyr Gly Tyr Gln Trp			
425	430	435	
GTG TCA GAA GAA CAC GAA GAG GCA CAT CAC ACT GCT TAT CTT GTG TTC			1399
Val Ser Glu Glu His Glu Ala His His Thr Ala Tyr Leu Val Phe			
440	445	450	
TCC CCA AGC AAG AGC TTT GTC CAC CTT GAG CCC ATG TCT CAT GAA CTA			1447
Ser Pro Ser Lys Ser Phe Val His Leu Glu Pro Met Ser His Glu Leu			
455	460	465	
CCC TGT GGC CAT ACT CAG ACA GTC CAG GCA CAT TAT ATT CTG AAT GGA			1495
Pro Cys Gly His Thr Gln Thr Val Gln Ala His Tyr Ile Leu Asn Gly			
470	475	480	
GGC ACC CTG CTG GGG CTG AAG AAG CTC TCC TTT TAT TAT CTG ATA ATG			1543
Gly Thr Leu Leu Gly Leu Lys Lys Leu Ser Phe Tyr Tyr Leu Ile Met			
485	490	495	500
GCA AAG GGA GGC ATT GTC CGA ACT GGG ACT CAT GGA CTG CTT GTG AAG			1591
Ala Lys Gly Gly Ile Val Arg Thr Gly Thr His Gly Leu Leu Val Lys			
505	510	515	

FIG.7A-3

## 55/65

CAG GAA GAC ATG AAG GGC CAT TTT TCC ATC TCA ATC CCT GTG AAG TCA			1639
Gln Glu Asp Met Lys Gly His Phe Ser Ile Ser Ile Pro Val Lys Ser			
520	525	530	
GAC ATT GCT CCT GTC GCT CGG TTG CTC ATC TAT GCT GTT TTA CCT ACC			1687
Asp Ile Ala Pro Val Ala Arg Leu Leu Ile Tyr Ala Val Leu Pro Thr			
535	540	545	
GGG GAC GTG ATT GGG GAT TCT GCA AAA TAT GAT GTT GAA AAT TGT CTG			1735
Gly Asp Val Ile Gly Asp Ser Ala Lys Tyr Asp Val Glu Asn Cys Leu			
550	555	560	
GCC AAC AAG GTG GAT TTG AGC TTC AGC CCA TCA CAA AGT CTC CCA GCC			1783
Ala Asn Lys Val Asp Leu Ser Phe Ser Pro Ser Gln Ser Leu Pro Ala			
565	570	575	580
TCA CAC GCC CAC CTG CGA GTC ACA GCG GCT CCT CAG TCC GTC TGC GCC			1831
Ser His Ala His Leu Arg Val Thr Ala Ala Pro Gln Ser Val Cys Ala			
585	590	595	
CTC CGT GCT GTG GAC CAA AGC GTG CTG CTC ATG AAG CCT GAT GCT GAG			1879
Leu Arg Ala Val Asp Gln Ser Val Leu Leu Met Lys Pro Asp Ala Glu			
600	605	610	
CTC TCG GCG TCC TCG GTT TAC AAC CTG CTA CCA GAA AAG GAC CTC ACT			1927
Leu Ser Ala Ser Ser Val Tyr Asn Leu Leu Pro Glu Lys Asp Leu Thr			
615	620	625	
GGC TTC CCT GGG CCT TTG AAT GAC CAG GAC GAT GAA GAC TGC ATC AAT			1975
Gly Phe Pro Gly Pro Leu Asn Asp Gln Asp Asp Glu Asp Cys Ile Asn			
630	635	640	
CGT CAT AAT GTC TAT ATT AAT GGA ATC ACA TAT ACT CCA GTA TCA AGT			2023
Arg His Asn Val Tyr Ile Asn Gly Ile Thr Tyr Thr Pro Val Ser Ser			
645	650	655	660
ACA AAT GAA AAG GAT ATG TAC AGC TTC CTA GAG GAC ATG GGC TTA AAG			2071
Thr Asn Glu Lys Asp Met Tyr Ser Phe Leu Glu Asp Met Gly Leu Lys			
665	670	675	
GCA TTC ACC AAC TCA AAG ATT CGT AAA CCC AAA ATG TGT CCA CAG CTT			2119
Ala Phe Thr Asn Ser Lys Ile Arg Lys Pro Lys Met Cys Pro Gln Leu			
680	685	690	

FIG.7A-4

## 56/65

CAA CAG TAT GAA ATG CAT GGA CCT GAA GGT CTA CGT GTA GGT TTT TAT	2167
Gln Gln Tyr Glu Met His Gly Pro Glu Gly Leu Arg Val Gly Phe Tyr	
695 700 705	
GAG TCA GAT GTA ATG GGA AGA GGC CAT GCA CGC CTG GTG CAT GTT GAA	2215
Glu Ser Asp Val Met Gly Arg Gly His Ala Arg Leu Val His Val Glu	
710 715 720	
GAG CCT CAC ACG GAG ACC GTA CGA AAG TAC TTC CCT GAG ACA TGG ATC	2263
Glu Pro His Thr Glu Thr Val Arg Lys Tyr Phe Pro Glu Thr Trp Ile	
725 730 735 740	
TGG GAT TTG GTG GTG GTA AAC TCA GCA GGG GTG GCT GAG GTA GGA GTA	2311
Trp Asp Leu Val Val Asn Ser Ala Gly Val Ala Glu Val Gly Val	
745 750 755	
ACA GTC CCT GAC ACC ATC ACC GAG TGG AAG GCA GGG GCC TTC TGC CTG	2359
Thr Val Pro Asp Thr Ile Thr Glu Trp Lys Ala Gly Ala Phe Cys Leu	
760 765 770	
TCT GAA GAT GCT GGA CTT GGT ATC TCT TCC ACT GCC TCT CTC CGA GCC	2407
Ser Glu Asp Ala Gly Leu Gly Ile Ser Ser Thr Ala Ser Leu Arg Ala	
775 780 785	
TTC CAG CCC TTC TTT GTG GAG CTT ACA ATG CCT TAC TCT GTG ATT CGT	2455
Phe Gln Pro Phe Phe Val Glu Leu Thr Met Pro Tyr Ser Val Ile Arg	
790 795 800	
GGA GAG GCC TTC ACA CTC AAG GCC ACG GTC CTA AAC TAC CTT CCC AAA	2503
Gly Glu Ala Phe Thr Leu Lys Ala Thr Val Leu Asn Tyr Leu Pro Lys	
805 810 815 820	
TGC ATC CGG GTC AGT GTG CAG CTG GAA GCC TCT CCC GCC TTC CTT GCT	2551
Cys Ile Arg Val Ser Val Gln Leu Glu Ala Ser Pro Ala Phe Leu Ala	
825 830 835	
GTC CCA GTG GAG AAG GAA CAA GCG CCT CAC TGC ATC TGT GCA AAC GGG	2599
Val Pro Val Glu Lys Glu Gln Ala Pro His Cys Ile Cys Ala Asn Gly	
840 845 850	
CGG CAA ACT GTG TCC TGG GCA GTA ACC CCA AAG TCA TTA GGA AAT GTG	2647
Arg Gln Thr Val Ser Trp Ala Val Thr Pro Lys Ser Leu Gly Asn Val	
855 860 865	

FIG.7A-5

## 57/65

AAT	TTC	ACT	GTG	AGC	GCA	GAG	GCA	CTA	GAG	TCT	CAA	GAG	CTG	TGT	GGG	2695
Asn	Phe	Thr	Val	Ser	Ala	Glu	Ala	Leu	Glu	Ser	Gln	Glu	Leu	Cys	Gly	
870					875						880					
ACT	GAG	GTG	CCT	TCA	GTT	CCT	GAA	CAC	GGA	AGG	AAA	GAC	ACA	GTC	ATC	2743
Thr	Glu	Val	Pro	Ser	Val	Pro	Glu	His	Gly	Arg	Lys	Asp	Thr	Val	Ile	
885					890					895			900			
AAG	CCT	CTG	TTG	GTT	GAA	CCT	GAA	GGA	CTA	GAG	AAG	GAA	ACA	ACA	TTC	2791
Lys	Pro	Leu	Leu	Val	Glu	Pro	Glu	Gly	Leu	Glu	Lys	Glu	Thr	Thr	Phe	
					905				910			915				
AAC	TCC	CTA	CTT	TGT	CCA	TCA	GGT	GGT	GAG	GTT	TCT	GAA	GAA	TTA	TCC	2839
Asn	Ser	Leu	Leu	Cys	Pro	Ser	Gly	Gly	Glu	Val	Ser	Glu	Glu	Leu	Ser	
					920				925			930				
CTG	AAA	CTG	CCA	CCA	AAT	GTG	GTA	GAA	GAA	TCT	GCC	CGA	GCT	TCT	GTC	2887
Leu	Lys	Leu	Pro	Pro	Asn	Val	Val	Glu	Glu	Ser	Ala	Arg	Ala	Ser	Val	
					935				940			945				
TCA	GTT	TTG	GGA	GAC	ATA	TTA	GGC	TCT	GCC	ATG	CAA	AAC	ACA	CAA	AAT	2935
Ser	Val	Leu	Gly	Asp	Ile	Leu	Gly	Ser	Ala	Met	Gln	Asn	Thr	Gln	Asn	
					950				955			960				
CTT	CTC	CAG	ATG	CCC	TAT	GGC	TGT	GGA	GAG	CAG	AAT	ATG	GTC	CTC	TTT	2983
Leu	Leu	Gln	Met	Pro	Tyr	Gly	Cys	Gly	Glu	Gln	Asn	Met	Val	Leu	Phe	
					965				970			975			980	
GCT	CCT	AAC	ATC	TAT	GTA	CTG	GAT	TAT	CTA	AAT	GAA	ACA	CAG	CAG	CTT	3031
Ala	Pro	Asn	Ile	Tyr	Val	Leu	Asp	Tyr	Leu	Asn	Glu	Thr	Gln	Gln	Leu	
					985				990			995				
ACT	CCA	GAG	GTC	AAG	TCC	AAG	GCC	ATT	GGC	TAT	CTC	AAC	ACT	GGT	TAC	3079
Thr	Pro	Glu	Val	Lys	Ser	Lys	Ala	Ile	Gly	Tyr	Leu	Asn	Thr	Gly	Tyr	
					1000				1005			1010				
CAG	AGA	CAG	TTG	AAC	TAC	AAA	CAC	TAT	GAT	GGC	TCC	TAC	AGC	ACC	TTT	3127
Gln	Arg	Gln	Leu	Asn	Tyr	Lys	His	Tyr	Asp	Gly	Ser	Tyr	Ser	Thr	Phe	
					1015				1020			1025				
GGG	GAG	CGA	TAT	GGC	AGG	AAC	CAG	GGC	AAC	ACC	TGG	CTC	ACA	GCC	TTT	3175
Gly	Glu	Arg	Tyr	Gly	Arg	Asn	Gln	Gly	Asn	Thr	Trp	Leu	Thr	Ala	Phe	
					1030				1035			1040				

FIG.7A-6

## 58/65

GTT CTG AAG ACT TTT GCC CAA GCT CGA GCC TAC ATC TTC ATC GAT GAA	3223
Val Leu Lys Thr Phe Ala Gln Ala Arg Ala Tyr Ile Phe Ile Asp Glu	
1045 1050 1055 1060	
GCA CAC ATT ACC CAA GCC CTC ATA TGG CTC TCC CAG AGG CAG AAG GAC	3271
Ala His Ile Thr Gln Ala Leu Ile Trp Leu Ser Gln Arg Gln Lys Asp	
1065 1070 1075	
AAT GGC TGT TTC AGG AGC TCT GGG TCA CTG CTC AAC AAT GCC ATA AAG	3319
Asn Gly Cys Phe Arg Ser Ser Gly Ser Leu Leu Asn Asn Ala Ile Lys	
1080 1085 1090	
GGA GGA GTA GAA GAT GAA GTG ACC CTC TCC GCC TAT ATC ACC ATC GCC	3367
Gly Gly Val Glu Asp Glu Val Thr Leu Ser Ala Tyr Ile Thr Ile Ala	
1095 1100 1105	
CTT CTG GAG ATT CCT CTC ACA GTC ACT CAC CCT GTT GTC CGC AAT GCC	3415
Leu Leu Glu Ile Pro Leu Thr Val Thr His Pro Val Val Arg Asn Ala	
1110 1115 1120	
CTG TTT TGC CTG GAG TCA GCC TGG AAG ACA GCA CAA GAA GGG GAC CAT	3463
Leu Phe Cys Leu Glu Ser Ala Trp Lys Thr Ala Gln Glu Gly Asp His	
1125 1130 1135 1140	
GGC AGC CAT GTA TAT ACC AAA GCA CTG CTG GCC TAT GCT TTT GCC CTG	3511
Gly Ser His Val Tyr Thr Lys Ala Leu Leu Ala Tyr Ala Phe Ala Leu	
1145 1150 1155	
GCA GGT AAC CAG GAC AAG AGG AAG GAA GTA CTC AAG TCA CTT AAT GAG	3559
Ala Gly Asn Gln Asp Lys Arg Lys Glu Val Leu Lys Ser Leu Asn Glu	
1160 1165 1170	
GAA GCT GTG AAG AAA GAC AAC TCT GTC CAT TGG GAG CGC CCT CAG AAA	3607
Glu Ala Val Lys Lys Asp Asn Ser Val His Trp Glu Arg Pro Gln Lys	
1175 1180 1185	
CCC AAG GCA CCA GTG GGG CAT TTT TAC GAA CCC CAG GCT CCC TCT GCT	3655
Pro Lys Ala Pro Val Gly His Phe Tyr Glu Pro Gln Ala Pro Ser Ala	
1190 1195 1200	
GAG GTG GAG ATG ACA TCC TAT GTG CTC CTC GCT TAT CTC ACG GCC CAG	3703
Glu Val Glu Met Thr Ser Tyr Val Leu Leu Ala Tyr Leu Thr Ala Gln	
1205 1210 1215 1220	

FIG.7A-7

## 59/65

CCA	GCC	CCA	ACC	TCG	GAG	GAC	CTG	ACC	TCT	GCA	ACC	AAC	ATC	GTG	AAG	3751
Pro	Ala	Pro	Thr	Ser	Glu	Asp	Leu	Thr	Ser	Ala	Thr	Asn	Ile	Val	Lys	
1225										1230					1235	
TGG	ATC	ACG	AAG	CAG	CAG	AAT	GCC	CAG	GGC	GGT	TTC	TCC	TCC	ACC	CAG	3799
Trp	Ile	Thr	Lys	Gln	Gln	Asn	Ala	Gln	Gly	Gly	Phe	Ser	Ser	Thr	Gln	
1240										1245					1250	
GAC	ACA	GTG	GTG	GCT	CTC	CAT	GCT	CTG	TCC	AAA	TAT	GGA	GCC	GCC	ACA	3847
Asp	Thr	Val	Val	Ala	Leu	His	Ala	Leu	Ser	Lys	Tyr	Gly	Ala	Ala	Thr	
1255								1260					1265			
TTT	ACC	AGG	ACT	GGG	AAG	GCT	GCA	CAG	GTG	ACT	ATC	CAG	TCT	TCA	GGG	3895
Phe	Thr	Arg	Thr	Gly	Lys	Ala	Ala	Gln	Val	Thr	Ile	Gln	Ser	Ser	Gly	
1270							1275					1280				
ACA	TTT	TCC	AGC	AAA	TTC	CAA	GTG	GAC	AAC	AAC	AAT	CGC	CTG	TTA	CTG	3943
Thr	Phe	Ser	Ser	Lys	Phe	Gln	Val	Asp	Asn	Asn	Asn	Arg	Leu	Leu	Leu	
1285						1290				1295				1300		
CAG	CAG	GTC	TCA	TTG	CCA	GAG	CTG	CCT	GGG	GAA	TAC	AGC	ATG	AAA	GTG	3991
Gln	Gln	Val	Ser	Leu	Pro	Glu	Leu	Pro	Gly	Glu	Tyr	Ser	Met	Lys	Val	
1305						1310				1315						
ACA	GGA	GAA	GGA	TGT	GTC	TAC	CTC	CAG	ACC	TCC	TTG	AAA	TAC	AAT	ATT	4039
Thr	Gly	Glu	Gly	Cys	Val	Tyr	Leu	Gln	Thr	Ser	Leu	Lys	Tyr	Asn	Ile	
1320						1325				1330						
CTC	CCA	GAA	AAG	GAA	GAG	TTC	CCC	TTT	GCT	TTA	GGA	GTG	CAG	ACT	CTG	4087
Leu	Pro	Glu	Lys	Glu	Glu	Phe	Pro	Phe	Ala	Leu	Gly	Val	Gln	Thr	Leu	
1335						1340				1345						
CCT	CAA	ACT	TGT	GAT	GAA	CCC	AAA	GCC	CAC	ACC	AGC	TTC	CAA	ATC	TCC	4135
Pro	Gln	Thr	Cys	Asp	Glu	Pro	Lys	Ala	His	Thr	Ser	Phe	Gln	Ile	Ser	
1350						1355				1360						
CTA	AGT	GTC	AGT	TAC	ACA	GGG	AGC	CGC	TCT	GCC	TCC	AAC	ATG	GCG	ATC	4183
Leu	Ser	Val	Ser	Tyr	Thr	Gly	Ser	Arg	Ser	Ala	Ser	Asn	Met	Ala	Ile	
1365						1370				1375				1380		
GTT	GAT	GTG	AAG	ATG	GTC	TCT	GGC	TTC	ATT	CCC	CTG	AAG	CCA	ACA	GTG	4231
Val	Asp	Val	Lys	Met	Val	Ser	Gly	Phe	Ile	Pro	Leu	Lys	Pro	Thr	Val	
1385						1390				1395						

FIG.7A-8

60/65

AAA ATG CTT GAA AGA TCT AAC CAT GTG AGC CGG ACA GAA GTC AGC AGC	4279		
Lys Met Leu Glu Arg Ser Asn His Val Ser Arg Thr Glu Val Ser Ser			
1400	1405	1410	
AAC CAT GTC TTG ATT TAC CTT GAT AAG GTG TCA AAT CAG ACA CTG AGC	4327		
Asn His Val Leu Ile Tyr Leu Asp Lys Val Ser Asn Gln Thr Leu Ser			
1415	1420	1425	
TTG TTC TTC ACG GTT CTG CAA GAT GTC CCA GTA AGA GAT CTC AAA CCA	4375		
Leu Phe Phe Thr Val Leu Gln Asp Val Pro Val Arg Asp Leu Lys Pro			
1430	1435	1440	
GCC ATA GTG AAA GTC TAT GAT TAC TAC GAG ACG GAT GAG TTT GCA ATC	4423		
Ala Ile Val Lys Val Tyr Asp Tyr Tyr Glu Thr Asp Glu Phe Ala Ile			
1445	1450	1455	1460
GCT GAG TAC AAT GCT CCT TGC AGC AAA GAT CTT GGA AAT GCT TGAAGACCA	4474		
Ala Glu Tyr Asn Ala Pro Cys Ser Lys Asp Leu Gly Asn Ala			
1465	1470	1	
CAAGGCTGAA AAGTGCTTTG CTGGAGTCCT GTTCTCTGAG CTCCACAGAA GACACGTGTT	4534		
TTTGTATCTT TAAAGACTTG ATGAATAAAC ACTTTTCTG GTC	4577		

FIG.7A-9

## 61/65

Ser Val Ser Gly Lys Pro Gln Tyr Met Val Leu Val Pro Ser Leu Leu  
 1 5 10 15  
 His Thr Glu Thr Thr Glu Lys Gly Cys Val Leu Leu Ser Tyr Leu Asn  
 20 25 30  
 Glu Thr Val Thr Val Ser Ala Ser Leu Glu Ser Val Arg Gly Asn Arg  
 35 40 45  
 Ser Leu Phe Thr Asp Leu Glu Ala Glu Asn Asp Val Leu His Cys Val  
 50 55 60  
 Ala Phe Ala Val Pro Lys Ser Ser Asn Glu Glu Val Met Phe Leu  
 65 70 75 80  
 Thr Val Gln Val Lys Gly Pro Thr Gln Glu Phe Lys Lys Arg Thr Thr  
 85 90 95  
 Val Met Val Lys Asn Glu Asp Ser Leu Val Phe Val Gln Thr Asp Lys  
 100 105 110  
 Ser Ile Tyr Lys Pro Gly Gln Thr Val Lys Phe Arg Val Val Ser Met  
 115 120 125  
 Asp Glu Asn Phe His Pro Leu Asn Glu Leu Ile Pro Leu Val Tyr Ile  
 130 135 140  
 Gln Asp Pro Lys Gly Asn Arg Ile Ala Gln Trp Gln Ser Phe Gln Leu  
 145 150 155 160  
 Glu Gly Gly Leu Lys Gln Phe Ser Phe Pro Leu Ser Ser Glu Pro Phe  
 165 170 175  
 Gln Gly Ser Tyr Lys Val Val Val Gln Lys Lys Ser Gly Gly Arg Thr  
 180 185 190  
 Glu His Pro Phe Thr Val Glu Glu Phe Val Leu Pro Lys Phe Glu Val  
 195 200 205  
 Gln Val Thr Val Pro Lys Ile Ile Thr Ile Leu Glu Glu Glu Met Asn  
 210 215 220  
 Val Ser Val Cys Gly Leu Tyr Thr Tyr Gly Lys Pro Val Pro Gly His  
 225 230 235 240  
 Val Thr Val Ser Ile Cys Arg Lys Tyr Ser Asp Ala Ser Asp Cys His  
 245 250 255  
 Gly Glu Asp Ser Gln Ala Phe Cys Glu Lys Phe Ser Gly Gln Leu Asn  
 260 265 270  
 Ser His Gly Cys Phe Tyr Gln Gln Val Lys Thr Lys Val Phe Gln Leu  
 275 280 285  
 Lys Arg Lys Glu Tyr Glu Met Lys Leu His Thr Glu Ala Gln Ile Gln  
 290 295 300  
 Glu Glu Gly Thr Val Val Glu Leu Thr Gly Arg Gln Ser Ser Glu Ile  
 305 310 315 320

FIG.7B-1

62/65

## 63/65

Asn Ser Lys Ile Arg Lys Pro Lys Met Cys Pro Gln Leu Gln Gln Tyr  
 660 665 670  
 Glu Met His Gly Pro Glu Gly Leu Arg Val Gly Phe Tyr Glu Ser Asp  
 675 680 685  
 Val Met Gly Arg Gly His Ala Arg Leu Val His Val Glu Glu Pro His  
 690 695 700  
 Thr Glu Thr Val Arg Lys Tyr Phe Pro Glu Thr Trp Ile Trp Asp Leu  
 705 710 715 720  
 Val Val Val Asn Ser Ala Gly Val Ala Glu Val Gly Val Thr Val Pro  
 725 730 735  
 Asp Thr Ile Thr Glu Trp Lys Ala Gly Ala Phe Cys Leu Ser Glu Asp  
 740 745 750  
 Ala Gly Leu Gly Ile Ser Ser Thr Ala Ser Leu Arg Ala Phe Gln Pro  
 755 760 765  
 Phe Phe Val Glu Leu Thr Met Pro Tyr Ser Val Ile Arg Gly Glu Ala  
 770 775 780  
 Phe Thr Leu Lys Ala Thr Val Leu Asn Tyr Leu Pro Lys Cys Ile Arg  
 785 790 795 800  
 Val Ser Val Gln Leu Glu Ala Ser Pro Ala Phe Leu Ala Val Pro Val  
 805 810 815  
 Glu Lys Glu Gln Ala Pro His Cys Ile Cys Ala Asn Gly Arg Gln Thr  
 820 825 830  
 Val Ser Trp Ala Val Thr Pro Lys Ser Leu Gly Asn Val Asn Phe Thr  
 835 840 845  
 Val Ser Ala Glu Ala Leu Glu Ser Gln Glu Leu Cys Gly Thr Glu Val  
 850 855 860  
 Pro Ser Val Pro Glu His Gly Arg Lys Asp Thr Val Ile Lys Pro Leu  
 865 870 875 880  
 Leu Val Glu Pro Glu Gly Leu Glu Lys Glu Thr Thr Phe Asn Ser Leu  
 885 890 895  
 Leu Cys Pro Ser Gly Gly Glu Val Ser Glu Glu Leu Ser Leu Lys Leu  
 900 905 910  
 Pro Pro Asn Val Val Glu Glu Ser Ala Arg Ala Ser Val Ser Val Leu  
 915 920 925  
 Gly Asp Ile Leu Gly Ser Ala Met Gln Asn Thr Gln Asn Leu Leu Gln  
 930 935 940  
 Met Pro Tyr Gly Cys Gly Glu Gln Asn Met Val Leu Phe Ala Pro Asn  
 945 950 955 960  
 Ile Tyr Val Leu Asp Tyr Leu Asn Glu Thr Gln Gln Leu Thr Pro Glu  
 965 970 975  
 Val Lys Ser Lys Ala Ile Gly Tyr Leu Asn Thr Gly Tyr Gln Arg Gln  
 980 985 990

## 64/65

Leu Asn Tyr Lys His Tyr Asp Gly Ser Tyr Ser Thr Phe Gly Glu Arg  
 995 1000 1005  
 Tyr Gly Arg Asn Gln Gly Asn Thr Trp Leu Thr Ala Phe Val Leu Lys  
 1010 1015 1020  
 Thr Phe Ala Gln Ala Arg Ala Tyr Ile Phe Ile Asp Glu Ala His Ile  
 1025 1030 1035 1040  
 Thr Gln Ala Leu Ile Trp Leu Ser Gln Arg Gln Lys Asp Asn Gly Cys  
 1045 1050 1055  
 Phe Arg Ser Ser Gly Ser Leu Leu Asn Asn Ala Ile Lys Gly Gly Val  
 1060 1065 1070  
 Glu Asp Glu Val Thr Leu Ser Ala Tyr Ile Thr Ile Ala Leu Leu Glu  
 1075 1080 1085  
 Ile Pro Leu Thr Val Thr His Pro Val Val Arg Asn Ala Leu Phe Cys  
 1090 1095 1100  
 Leu Glu Ser Ala Trp Lys Thr Ala Gln Glu Gly Asp His Gly Ser His  
 1095 1110 1115 1120  
 Val Tyr Thr Lys Ala Leu Leu Ala Tyr Ala Phe Ala Leu Ala Gly Asn  
 1125 1130 1135  
 Gln Asp Lys Arg Lys Glu Val Leu Lys Ser Leu Asn Glu Glu Ala Val  
 1140 1145 1150  
 Lys Lys Asp Asn Ser Val His Trp Glu Arg Pro Gln Lys Pro Lys Ala  
 1155 1160 1165  
 Pro Val Gly His Phe Tyr Glu Pro Gln Ala Pro Ser Ala Glu Val Glu  
 1170 1175 1180  
 Met Thr Ser Tyr Val Leu Leu Ala Tyr Leu Thr Ala Gln Pro Ala Pro  
 1185 1190 1195 1200  
 Thr Ser Glu Asp Leu Thr Ser Ala Thr Asn Ile Val Lys Trp Ile Thr  
 1205 1210 1215  
 Lys Gln Gln Asn Ala Gln Gly Gly Phe Ser Ser Thr Gln Asp Thr Val  
 1220 1225 1230  
 Val Ala Leu His Ala Leu Ser Lys Tyr Gly Ala Ala Thr Phe Thr Arg  
 1235 1240 1245  
 Thr Gly Lys Ala Ala Gln Val Thr Ile Gln Ser Ser Gly Thr Phe Ser  
 1250 1255 1260  
 Ser Lys Phe Gln Val Asp Asn Asn Asn Arg Leu Leu Leu Gln Gln Val  
 1265 1270 1275 1280  
 Ser Leu Pro Glu Leu Pro Gly Glu Tyr Ser Met Lys Val Thr Gly Glu  
 1285 1290 1295  
 Gly Cys Val Tyr Leu Gln Thr Ser Leu Lys Tyr Asn Ile Leu Pro Glu  
 1300 1305 1310  
Lys Glu Glu Phe Pro Phe Ala Leu Gly Val Gln Thr Leu Pro Gln Thr  
 1315 1320 1325

FIG.7B-4

65/65

Cys Asp Glu Pro Lys Ala His Thr Ser Phe Gln Ile Ser Leu Ser Val  
1330 1335 1340

Ser Tyr Thr Gly Ser Arg Ser Ala Ser Asn Met Ala Ile Val Asp Val  
345 1350 1355 1360

Lys Met Val Ser Gly Phe Ile Pro Leu Lys Pro Thr Val Lys Met Leu  
Glu Arg Ser Asn His Val Ser Arg Thr Glu Val Ser Ser Asn His Val  
Leu Ile Tyr Leu Asp Lys Val Ser Asn Gln Thr Leu Ser Leu Phe Phe  
Thr Val Leu Gln Asp Val Pro Val Arg Asp Leu Lys Pro Ala Ile Val  
1410 1415 1420

Lys Val Tyr Asp Tyr Tyr Glu Thr Asp Glu Phe Ala Ile Ala Glu Tyr  
425 1430 1435 1440

Asn Ala Pro Cys Ser Lys Asp Leu Gly Asn Ala  
1445 1450

FIG. 7B-5